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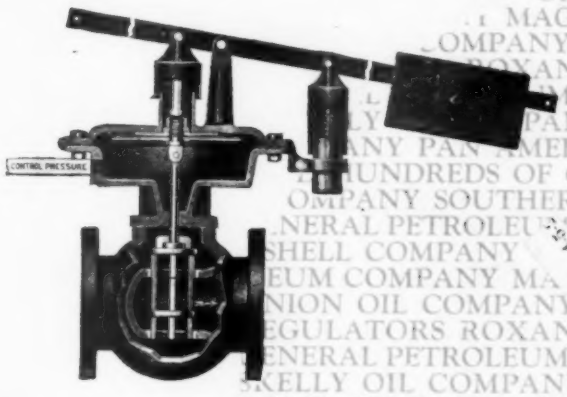

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The Oil and Gas Journal

PRODUCING REFINING MARKETING

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Production Attains New High Record

Highest daily average estimated production in 1925 week ended May 30, 2,347,984 bbls. Lowest in 1925, January 3, 1,911,730 bbls.

Oklahoma, With New Peak, California and Texas Responsible for Greatest Output in History of Industry

By Andrew M. Rowley

Highest daily average estimated light oil production in 1925, week ended January 17, 1,525,220 bbls. Lowest in 1925, July 18, 1,374,173 bbls.

Crude oil production in the United States established a new high record last week when the output of all fields in the country averaged 2,355,344 barrels daily. The previous record was made in the week ending May 30, 1925, when the average was 2,347,984 barrels daily, that peak resulting from the flood of oil from the Smackover Field in Arkansas. The general strength displayed by the petroleum industry this year is emphasized when it is considered the enormous production of the Smackover Field had very little effect upon the crude price structure because of the fact that crude was a heavy oil and yet the posted price for 36 gravity crude May 30, 1925, was $2 a barrel in the Mid-Continent area and the price now, as posted by the same company, is $2.29 a barrel. Yet production of light oil for the week ending May 30, 1925, averaged 1,427,706 barrels while last week it averaged 1,757,679 barrels. The factor largely responsible for this condition is the great increase in consumption of petroleum products which has enlarged the demand for crude oil and permits a rapid absorption of production.

Oklahoma attained its highest production in history last week when it averaged 557,880 barrels daily, its former record being an average of 546,935 barrels daily during the week ending September 20, 1924. It is interesting to note that three states—Oklahoma, Texas and California—contributed 1,821,669 barrels daily to the average last week, the output of the fields in Texas averaging 631,289 barrels and those of California, 632,500 barrels.

Conservation efforts made effective in the Seminole Field in Oklahoma last week whereby production will be held down to facilities for handling the crude have relieved the situation there and the output of that field will increase only in the measure of the means for taking care of the oil. A significant development of the week in that area was the completion of a well 9 miles from the present production of the pool, which was making 125 barrels an hour.

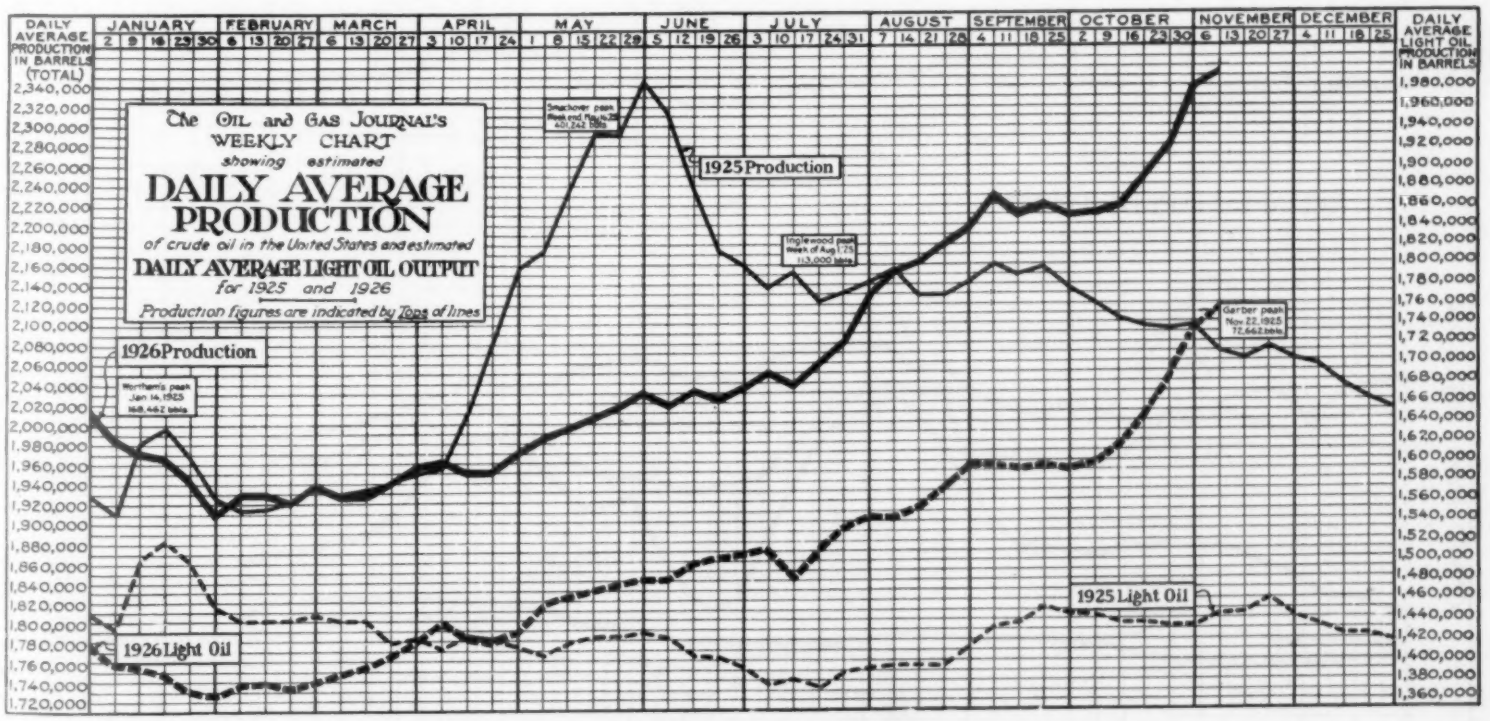
It is almost certain crude oil production in the United States for 1926 will exceed that for 1925 by a substantial quantity which may total 10,000,000 barrels, according to present estimates.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended November 6, and a comparison with the previous week follows:

	Nov. 6		Oct. 30	
	Light	Heavy	Light	Heavy
Oklahoma—				
Tonkawa	34,660	.....	35,010	.....
Burbank	48,010	.....	48,645	.....
Other Osage Fields	34,405	.....	34,105	.....
Cushing and Shamrock	21,415	.....	21,435	.....
Bristow and Eastern Bristow	26,940	.....	27,020	.....
Cromwell	15,060	.....	14,795	.....
Garber	23,515	.....	23,735	.....
Blackwell-Braman	38,490	.....	32,840	.....
Seminole	112,585	.....	97,885	.....
Wewoka	25,540	.....	26,130	.....
Northern Miscellaneous	113,750	.....	114,210	.....
Southern Fields	63,510	.....	63,840	.....
Total Oklahoma	557,880	.....	539,650	.....
North Louisiana	43,155	14,350	43,955	15,590
Arkansas—				
Smackover	13,860	115,115	13,895	116,675
Miscellaneous	17,240	.....	17,460	.....
Total Arkansas	31,100	115,115	31,355	116,675
North Central and West Texas	206,775	.....	203,174	.....
Texas Panhandle	158,235	.....	157,645	.....
East Central Texas	55,704	.....	56,730	.....
Kansas	114,815	.....	114,715	.....
Total Mid-Continent Area	1,167,664	129,465	1,147,224	132,265
Gulf Coast	.....	178,810	.....	177,405
Southwest Texas	.....	42,890	.....	43,080
Eastern	109,200	.....	108,650	.....
Rocky Mountain Area	94,815	.....	101,485	.....
California—				
Santa Fe Springs	47,000	.....	47,000	.....
Long Beach	94,000	.....	94,500	.....
Huntington Beach	75,000	.....	72,000	.....
Torrance	5,000	21,000	5,000	21,500
Dominguez	22,000	.....	22,000	.....
Rosecrans	14,000	.....	14,000	.....
Inglewood	25,000	15,500	25,000	16,000
Ventura Avenue	54,000	.....	52,000	.....
Remainder of State	50,000	210,000	50,000	211,000
Total California	386,000	246,500	381,500	248,500
Total United States	1,757,679	597,665	1,738,859	601,250
Grand Total		2,355,344		2,340,109

Total Increase, 15,235 Bbls.; Light Oil Increase, 18,820 Bbls.



WHAT AND WHERE TO BUY—PAGES 173-174-175

Group 3 Refined Market Fails to Hold

Naturals Tight but Prices on Most Products Suffer Declines With Demand Slow After Crude Cuts

By Neil Williams

Developments in the Oklahoma (Group 3) refined market the past week following reductions in Mid-Continent crude by major buyers were not favorable. Nearly all products, except natural gasolines, experienced further weakening and a generally inactive tone prevailed.

Sharp declines in gasoline prices ranging from a quarter to a half cent, reductions of a quarter cent in kerosenes and distillates, fractional concessions in fuel oil but advances of an eighth to a quarter cent in natural gasolines summed up the changes during the week.

The most bearish influence in Oklahoma markets was the situation in other refining centers of the Mid-Continent, namely, north Texas and north Louisiana. Due largely to the fact that more crude was affected by reductions in those areas than in Oklahoma and to the fact that more material was available there, refiners in north Texas and Louisiana to move their products in competition with Group 3 quoted such low prices that the Oklahoma market was weakened very materially.

Plenty of Material

The appearance of large quantities of material, especially gasolines, in north Texas and north Louisiana, came as a surprise to Oklahoma refiners as only a week to ten days ago those markets were apparently tight and quotations were stronger than in Group 3. Also purchases of several million gallons of aviation gasoline were supposed to have cleaned markets there in fairly good shape.

However, offerings of U. S. Motor gasoline the past week out of north Texas and Louisiana in substantial quantities as low as 9 cents, and other products in proportion, forced Oklahoma refiners to cut their quotations accordingly, although the largest buyers in Oklahoma still had not reduced crude prices.

REFINED MARKET BAROMETER

Refined markets of the country were far from favorable the past week. With the exception of scattered products, a generally soft tone prevailed in all areas and price trends were downward. Gasoline demand was light, due both to unfavorable weather and also to unsettled crude and tankwagon conditions. Natural gasolines were tighter in the Mid-Continent, but no improvement was shown elsewhere. Kerosene was spotted. A fair demand in the eastern sections maintained firm markets there. In the Mid-Continent movements were sluggish and prices declined. Fuel oil and gas oil were inactive in the Mid-Continent, except north Texas, firm to strong in eastern markets and showed improvement in demand in California. However, the colder weather which has hurt gasoline consumption is expected to stimulate demand for fuel and burning oils. Distillates at refineries were weaker in the Mid-Continent and Chicago districts, although a firmer tone was given furnace oils from distributors. Lubricating oils generally were steady with demand fair.

Mid-Continent—Gasoline and kerosene prices lower in all areas, due to slow demand and abundance of material offered in north Texas and north Louisiana. A generally uncertain condition prevailed, due to unsettled crude and tankwagon markets. Natural gasolines tighter and quotations advanced. Spot orders not active, but contract movements taking most of supply. Fuel oil and gas oil situation unchanged. North Texas market alone firm, due to recent purchases. Distillates weaker.

Atlantic Seaboard—Continued bad weather curtailed gasoline consumption, but market prices unchanged. Gasoline believed in "strong hands." Fuel oils, gas oil, kerosene and furnace oils firm. Expected reduction in lubricant prices failed to materialize. Wax dull. Gasoline and kerosene export movement restricted.

Pennsylvania—Gasoline and naphtha weaker. Fuel oil stronger, due to tight coal situation. Neutrals in good demand, but bright stocks weaker and cylinder stocks still dull. Wax inactive. Kerosene weakened by 1-cent tankwagon reduction in Pennsylvania and Delaware Tuesday.

Chicago—Gasoline prices lower, but demand better for higher gravities. Kerosene steady. Gas oil and fuel oil unchanged. Tankwagon prices of fuel and furnace oils advanced by many distributors.

California—Market generally unchanged, but gasoline prices being shaded. Natural gasolines unsettled. Fuel oil moving in better volume, but large quantities available keep prices soft.

Group 3 refiners still claim to be in fairly good position so far as surplus stocks of refined products are concerned, but the sluggish demand and low quotations in other areas was viewed with uncertainty and it was apparent that there was some backing up of refined products into storage.

The fact that some of the major buyers of crude in Oklahoma have not followed reductions of other big purchasers is proving a very disturbing factor. With two main schedules of prices at wide variance with each other in effect both buyers and sellers have been "up in the air." A unanimous reduction in crude prices has been looked for every minute but late Tuesday this had not materialized.

Price Cutting Wars

The gasoline tankwagon situation in territories where Mid-Continent products are marketed still is far from settled, which is being reflected in refined markets. A wide margin exists even after the recent 1-cent reduction in the Standard Oil Co. of Indiana territory and the past week a decided trend toward price cutting wars was noticed. Cuts of from 2 to 4 cents in tankwagon and service station prices at many points were put into effect by the major marketers to meet competition of underselliers.

Until the past week there was a tendency for refinery gasoline prices to hold steady and even the 1-cent tankwagon reduction had no effect on the market outwardly, but increasing price war cuts seem to be having an unfavorable influence on refined market conditions.

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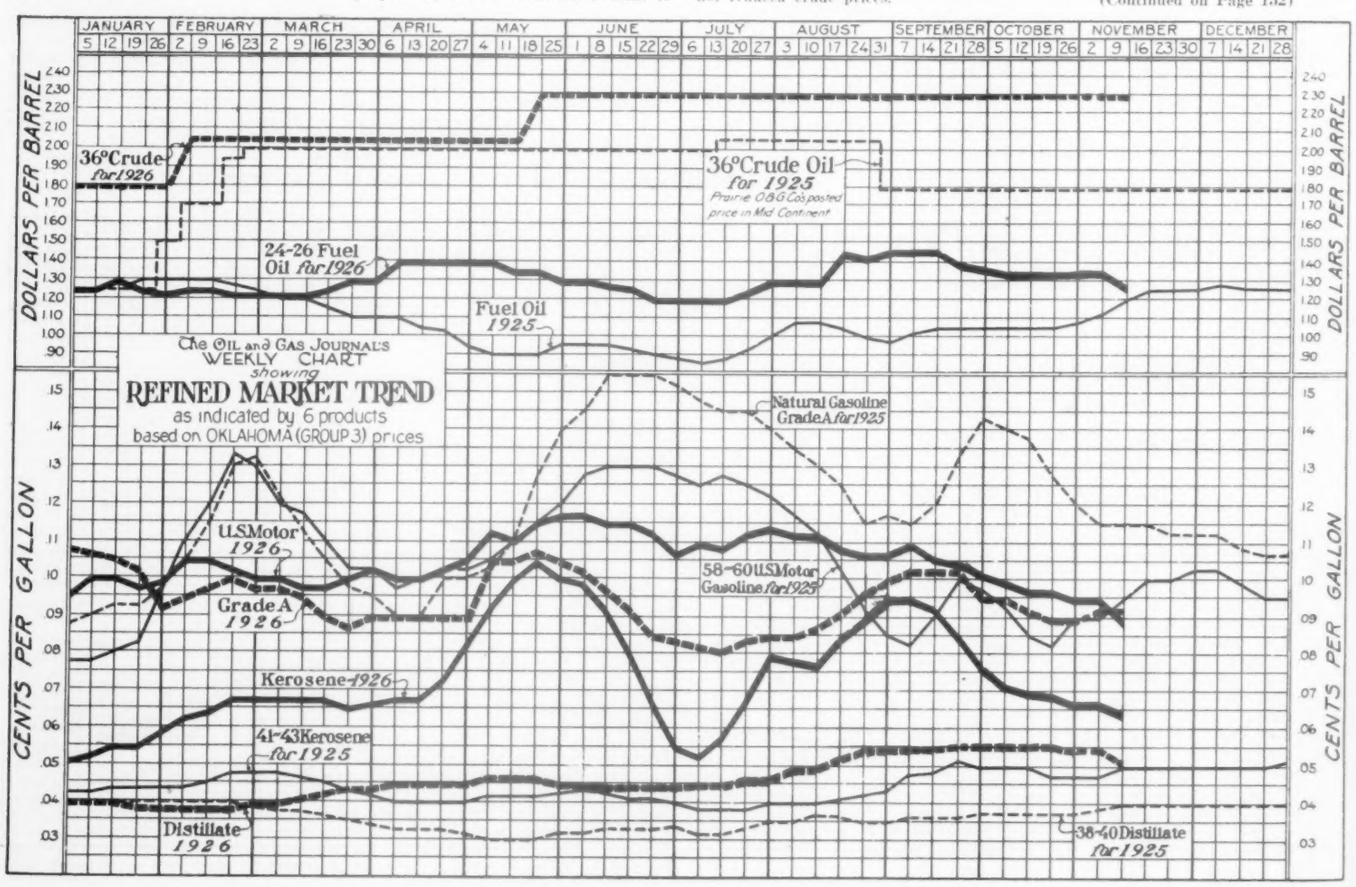

Trade-Marks Disturb Market Situation

F. A. Howard at Patent Club Hearing Explains Difficulties of Standard Companies' Territorial Position. Teagle and Stewart Testify

By L. M. Fanning

New York Bureau, The Oil and Gas Journal, Room 543, 30 Church St., New York City

The defense in the case of the Standard Oil Co. of Indiana and 46 other oil companies accused of violating the anti-trust law by pooling patents for cracking processes completed its direct testimony on November 4 before Special Master Charles Martindale sitting in New York. Adjournment was taken to December 13, when the Government will put in its rebuttal.

The special master hopes to have briefs of both sides in by the new year, and it is indicated that his report will be made to the court probably within a month thereafter. The next step will be arguments on the report before the District Court. Appeal would be direct to the Supreme Court of the United States.

Walter C. Teagle, president of the Standard Oil Co. of New Jersey, which company with the Indiana concern, The Texas Company and the Gasoline Products Co. is a primary defendant, in detailed testimony as to the company's producing, refining and marketing activities, brought out under the examination by John W. Davis, counsel for the company, that under the dissolution decree the company was restricted in territory so far as direct retail sales are concerned but that it sells bulk quantities of petroleum products to companies operating in other domestic marketing districts.

He asserted that the company had at no time since the dissolution been a party to any contract or understanding, express or implied, direct or indirect, with any other so-called Standard Oil company, as to competitive matters, and, in particular, as to any division of marketing territory.

Frank A. Howard, member of the manufacturing committee of the New Jersey company and president of the Standard Development Co., also testifying in the case, developed a point which has apparently not previously been made in discussions of competi ive activities of the so-called Standard Oil companies, that if the New Jersey company attempted to extend its retail distributing territory it wou'd run into trade mark difficulties and corporation law entanglements related to similarity of names of companies. Mr. Howard, who has been connected with the company since 1919 and was formerly with the Standard Oil Co. of Indiana, detailed developments connected with cracking patents and the licensing of the processes.

Seth B. Hunt, vice pres'dent of the New Jersey company, told of the efforts of the company to obtain the most successful types of cracking patents and went over the records connected with the licensing of the Burton process.

Stewart's Testimony

Colonel Robert W. Stewart, chairman of the board of the Standard Oil Co. of Indiana, was the last witness for the defense, the feature of his testimony being the relation of the development of the present contracts licensing the Burton process. He stated that in 1913 his company did about 80 per cent of the oil business in the eleven states in which it markets and to show the growth of competition last year it did about 40 per cent of the total business. In 1913 there were 161 competitors with 465 stations, while last year there was 8,234 competitors in the district with 19,078 stations.

He stated that the company had never refused to issue a license for the Burton process to any refiner since its policy of licensing was initiated. The company, he stated, had never invoked the territorial restriction in the matter of marketing gasoline from its licensed process in its own territory, although some licensees had invaded the Indiana area. He also said that it had never exercised its option of purchasing certain portions of the products refined by the users of the Burton process.

Mr. Teagle stated that in the New Jersey company's domestic distribution of products refined by the company, 65 per cent, approximately is in its retail marketing district, and about 35 per cent is in wholesale distribution to other companies operating in other territories. The reason why the Standard Oil Co. of New Jersey, made certain agreements in 1914 with the Indiana company, limiting the shipmen's of oil products between this country and Canada, Mr. Teagle, stated, was not to coerce or restrain trade as the Government contends, but merely to "preserve the validity of the New Jersey company's patents held in its foreign subsidiaries."

Trade Mark Situation

Mr. Howard, who is responsible for the research and development work of the New Jersey company and for patent and trade mark work, said that when he joined the company in 1919 it was a large user of the Burton process, having two or three hundred pressure stills in operation at that time. It was doing experimental work along three different lines relating to oil cracking; first, an aluminum chloride process, which he shelved as too costly; second, improvement of the Burton still operation, and third, a method of handling Mexican crude oil which originated the tube-and-tank cracking process now controlled and licensed by the company.

He related the history of the Ellis process and the development of litigation involving the four primary defendants, and finally the drawing up of the pooling arrangements.

Mr. Howard was asked as to the difficulties that would be encountered by the New Jersey company or the Standard Oil Co. (Louisiana) in extending their retail distributing business over territory other than the present territory covered. The trade marks of these companies, he explained, ei her common law or registered trade marks, before the disso'ution appear to have been used indiscriminately by the various marketing divisions, or companies, each in its own territory. He pointed out that no attention seems to have been paid to the matter as to where the ownership of these brands rested by any of the parties involved in the dissolution case.

The result has been that each former subsidiary has been marketing under the brands that it had at the time of the dissolution in its territory. For example, the Polarine brand of lubricating oil, registered in the name of the Atlantic Refining Co., was used by the New Jersey company and various other subsidiaries. After the dissolution, the Atlantic Refining Co. continued to market Polarine in its territory and even extended into the territory of the Standard Oil Co. of New York; the New Jersey, Indiana and Ohio companies also continued to market under that brand. Mr. Howard referred to other brands similar'y used, among them Red Crown gasoline.

"As to those common law trade marks," Mr. Howard said, "I have been unable to see that I could advise our trade departments what their rights would definitely be if they endeavored to sell Solar Red oil, for example, in a territory in which somebody else, for the last fifteen years, has been using the name 'Solar Red' oil, as app'ied to products made by them, and what their rights would be, I don't know.

State Requirements

"The second phase of th's difficulty is this: Thirty states, approximately, out of the 48 states of the United States, have as a part of their corporate statutes the same sort of requirement or condition, that a corporation will not be permitted to be organized or will not be licensed to do bus'ness under their laws under a name that is the same as or close to that of a corporation previously organized to do business in the same state, as to be apt to cause confusion.

"Furthermore, back of that there were two other legal difficulties: One is that in some states in wheih there are provisions to this effect I am advised it is discretionary with the secretary of state as to whether he shall accept a corporation or issue a corporation charter under a name which is so simi'ar to that of a previously organized or qualified company as to cause confus'on. The third difficulty there is the old common law difficulty of attempting to go into a district in which a business is conducted under a certain manufacturer's name or marketer's name, and establishing there a new business of the same kind under a name so nearly like another as to cause confusion. That is, quite aside from the question of whether you can get permission from the secretary of state to qualify to do business in the state under a corporate name.

"There is a question whether having so qual'fied under the common law you would have a right to do business in that way over the objection of a company previously doing business of the same kind under an identical name or substantially identical name.

"These are difficulties and embarrassments which have been under consideration by me in connection with the trade mark affairs of our company since 1919, with regard to what course could be pursued to expand the eographical retail marketing territory of the company beyond the limits which it occupied at the date of the dissolution decree.

"I have talked this over many times with outside counsel and with our own counsel and our directors, and the only clear road that I can see is that we should adopt a different name and different set of brands in any territory in which there exists a company now having a name similar to ours, or in which a company is se'ling oil of the same brands which we now use. That means that the only clear road I see is to establ'sh a new business in that territory, standing on its own feet."

Keen Competition

Colonel Stewart in reply to a question called the Indiana marketing territory "one of the most fiercely competitive districts that I have ever see." There is no company or group of companies that control or monopolize the business, he asserted. After detailing competitive conditions, he said that since the execut'on of contract No. 31 between The Texas Company and the Indiana company concerning the settlement of patent troubles, there had been no diminution of The Texas Company's competition in that territory.

Regarding the primary agreements on pooling patents executed between the Indiana company, The Texas Company, the Gasoline Products Co. and the Standard Oil Co. of New Jersey, he said they were executed openly and no secrecy was observed. Copies were sent to the Department of Justice, the Federal Trade Commission and to some of the state governments.

Colonel Stewart outlined the development of the Burton process. He said the company was advised it had a perfect legal right to either license or not license any person under the Burton patent. Asked about the territorial restriction paragraph in the licensing contract, he said this had originally developed from the fact that the increased yield of gaso-

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PIPELINES PREPARING FOR BIG BUSINESS IN THE SEMINOLE AREA

The Seminole Field in Seminole County, Oklahoma, will by the close of the year, have a crude oil shipping capacity of 200,000 bbls. a day, provided by the leading pipeline systems of the state.

The present pipeline capacity is in the neighborhood of 100,000 bbls. and some of the companies already shipping oil by pipeline from that field are preparing to increase their facilities, while several new lines are being laid, or preparations are well under way to lay them.

The Prairie Pipe Line Co. should be able to handle 50,000 bbls. a day out of the field before Christmas and the Oklahoma Pipe Line Co.'s complete program there calls for a 50,000-bbl. shipping capacity.

The latter company is already running 25,000 bbls. a day. It has two 6-inch lines from the Seminole Field to its south bound main line. It is now laying an 8-inch line from Drumright to Cromwell and will lay another 6-inch line from the Seminole field to Cromwell. It has not been operating its four lines to capacity, but with three 6-inch and two 4-inch lines together with its big line from Cromwell north to Drumright it will be able to handle 50,000 bbls. a day out of the field.

Other Companies Act've

The Sinclair Pipe Line Co. can handle 18,000 bbls. a day out of Seminole, but it is not planning any increase to this at present.

The Gulf Pipe Line Co. is one of the big shippers out of Seminole and can move 20,000 bbls. a day through its 8-inch line, but with additional power now being installed this will soon be increased to a capacity of 30,000 bbls. a day. This line runs 43 miles north and east to the main line station at Grayson. The Magnolia, Tidal and Independent pipeline companies are handling the remainder of the production thus far.

The Prairie is laying an 8-inch screw joint line from the Searight pool to Shawnee a distance of 22 miles, which will have a capacity of 20,000 bbls. a day. It should be ready for service by December 15.

The Empire Pipe Line Co. expects to be running oil from Seminole by December 15, if weather conditions are favorable. The company will lay 22 miles of 6-inch line from the field to connect with its 6-inch line which ends in Section 6-9-10, in Hughes County. The line will consist of 9 miles of welded line and 13 miles of screwed line. It will have a capacity of 12,000 bbls. a day. The pipe is on the road and the rights of way are being obtained and the actual work of construction will commence as soon as poss'ble. The company has not definitely chosen its station site in the field, but it will be in a central location. The type of pumps and engines has not been definitely settled. Diesel engine and electric motor power are under consideration.

The Texas Company will lay a 4-inch

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Says Federal Anti-Trust Acts Do Not

Sherman Anti-Trust Law Affects Interstate Commerce Only Various States, According to Opinion of Oil Company Atto

By John H. Brennan
Chief Counsel, Barnsdall Oil Corp.

My attention has been called to an interview with Secretary Hoover regarding the advisability of amending the Sherman Anti-Trust law, the Clayton Act and similar federal legislation in order to give opportunity to the producers in the different states of combining, in times of great over-production, without violating said law. I have always contended, and have repeatedly submitted briefs and authorities to the effect that the production of oil or gas in the several states is not a matter for federal legislation or control. The propositions of law involved are elementary and simple.

The question as to whether an agreement between producers of oil to limit operations and thus suppress production, or a like agreement among refiners, may be a monopoly at common law or in violation of the anti-trust statutes of the various states, I will not discuss. A movement of this character within the several states for the proper conservation of oil will not meet with very much, if any, opposition from state authorities. Thus the only question of practical value to be discussed is the purview and jurisdiction of the Federal Government in the execution of the Sherman Anti-Trust Law, the Clayton Act, and the jurisdiction of the Federal Trade Commission.

Conservation Laws

With particular reference to the anti-trust laws in the several states, I will venture that if proper and effective laws are passed providing for the conservation of oil and gas, and providing for the supervision of an administrative board, together with penalties, it will be held that compliance therewith will not be a violation of the anti-trust laws of the State because all the laws covering a certain subject will be construed together so that the same will be given effect. In Oklahoma we have Sections 7954 to 7963, inclusive, which seek to prevent the taking of crude oil from any oil-bearing sand at a time when there is not a market demand therefor, or, when such taking would result in waste. I dare say that an agreement between the producers, seeking to carry out and obey this law, would not be considered a violation of the anti-trust laws of the State found in another chapter.

The State of Oklahoma substantially has an overriding royalty of three per cent of all oil and gas production and thus is heavily interested in the proper development of new pools. Consistent with the promises of the oil industry to the Federal Oil Conservation Board, the Mid-Continent Oil and Gas Association should appoint a committee to confer with State authorities and proceed to amend the local laws by legislation this winter; for instance to remove the "jokers" which prevent the Corporation Commission from acting in the matter of combination wells, or casing-head gas, so as to apply to all waste of oil or gas, and thus prevent a recurrence of the tragedy of the Cromwell Field when the State in the Corporate capacity lost a fortune.

Affect Only Interstate Commerce

However, addressing this article to the powers of the Federal Government and the operation of the Sherman Anti-Trust Act, will note that all these Acts are, on their face, confined to interstate commerce. Any amendment thereto relieving the production of oil and gas in the several states from the purview of the Acts would be purile and surplusage.

The consideration of this question is rendered very interesting by the report of the Federal Oil Conservation Board, filed September 6, 1926. This Board was appointed by the President on or about December, 1924, and consists of the Secretaries of War, Navy, Interior and Commerce. As far as the question we are debating is concerned, the conclusions of the Board may be summarized as follows:

(a) That the Federal Government has no power that it can directly exercise to control the operations of producers and refiners in the several states of the Union, but that it is a proper subject for state legislation.

(b) The suggestion that development be restricted through voluntary agreement of the owners.

(c) Such agreements or combinations as had been put in practice heretofore endorsed by the Board.

(d) If operators were afraid of the law in that regard, that they should secure appropriate state legislation—signifying very clearly that national legislation was not necessary or would be inoperative.

No Federal Jurisdiction

This report clarifies the atmosphere to some extent, as the Board has referred to our fears as "an actual or imaginary, or pretended barrier to co-operative action." In any event, any change in the Federal Laws would be of no service to producers because Federal authority has no jurisdiction, and cannot consent to that which they cannot prohibit.

The Sherman Anti-Trust Law, the Clayton Act, and the Act creating the Federal Trade Commission are all expressly, on their face, limited to interstate commerce. There is no delegation of power to Congress to pass anti-trust laws or control or regulate monopoly in the several states. Congress, therefore, was limited to such powers as it might have under the power to regulate commerce between the states, and have been so limited and restricted by repeated adjudications of the highest court in the land. These laws do not apply to contracts or combinations relating to the business of producing or manufacturing within a state, although the manufacturing combination, or suppression of production, constitutes a monopoly.

United States vs. E. C. Knight, 156 U. S. 1; 39 L. Ed. 325.
Addyston Pipe Co. vs. United States, 44 L. Ed. 136.
Kidd vs. Pearson, 32 L. Ed. 346.
Hammer vs. Dagenhart, 62 L. Er. 1101.
U. S. Mine Workers vs. Coronado Coal Co., 66 L. Ed. 975.
Federal Trade Commission vs. Lorillard, 283 Fed. 999.
United States vs. Basic Products Co., 260 U. S. 472.
Federal Trade Commission vs. Lorillard, 68 L. Ed. 696.

In the Knight case, the purchase of several refineries of sugar was involved.

One Prominent Example

In the Hammer case, known as the Childs' Labor Law Case, Congress passed an act attempting to control labor on manufactured goods intended for interstate commerce, but the Supreme Court substantially held that Commerce commenced, and the power of the Federal Government attached, only when the goods were actually delivered in interstate commerce. "The mere fact that they were intended for interstate commerce transportation does not make their production subject to Federal control under the commerce power."

In the Addyston case, above cited, the Court held that delivery of the manufactured goods within the state rendered it an intra-state transaction, notwithstanding that the purchaser intended to transport the same outside of the state. Therefore, I claim that refinery products delivered f. o. b. any point in Oklahoma would be a local transaction, and not interstate commerce.

In the Coronado Coal Company case, above cited, it was claimed that the defendants had formed a conspiracy in violation of the Sherman Anti-Trust Act to prevent the products of the coal mines from being shipped in interstate commerce. The Supreme Court of the United States held that the production of coal and the mining of the same within the limits of a state, was not subject to Federal control, nor to the purview of the Trust Acts, and that the intention to ship the products in interstate commerce was not sufficient. Many other cases might be cited.

The Commerce Clause

I desire to submit herewith, on the subject of the Commerce clause, a part of our brief filed with the Federal Oil Conservation Board. It is very clear, under these decisions, that Congress has no constitutional control of petroleum or the refining thereof under the Commerce clause, until the product is actually delivered into tank cars or into pipe lines for interstate transportation. I do not refer to any combination seeking to control the ultimate market of the consumer, but, under these authorities, I say that the incidental influence on interstate commerce would not be sufficient in the case of an honest suppression of production or manufacture.

The precise point now under inquiry, may be elucidated by reference to some of the Acts of Congress which were upheld as a valid exercise of the commercial power of the Federal Government. In Champion vs. Ames, 188 U. S. 321, it was held that Congress might pass a law having the effect of keeping the channels of commerce free from use in the transportation of tickets used in the promotion of lottery schemes. In Hippolite Egg Co. vs. United States, 220 U. S. 45, the Court sustained the power of Congress to pass the Pure Food and Drug Act, which prohibited the introduction into the States by means of interstate commerce, of impure foods and drugs. These cases proceed upon the principle that interstate commerce was promoted and protected and thereby, property regulated by prohibiting the use of the facilities of interstate commerce in the transportation of things or commodities which were inherently bad.

Decision Regarding Mining

But in Hammer vs. Dagenhart, 247 U. S. 251, 62 L. Ed. 1101, Mr. Justice Day says: "The power (commerce power) is one to control the means by which commerce is carried on, which is directly the contrary of the assumed right to forbid commerce from moving, and thus destroy it as to particular commodities." Before pointing out the considerations which refute any possible contention that Congress would have the power to regulate the drilling of oil wells in the several States under the Commerce clause, certain controlling decisions should be examined. In Heisler vs. Thomas Colliery Co., 260 U. S. 245, 67 L. Ed. 237, it was contended that a statute of the State of Pennsylvania, placing a tax on anthracite coal, intended for interstate commerce, was unconstitutional, in that it amounted to an interference with interstate commerce. The Court, in upholding the validity of the Act emphasized the local character of coal, saying:

"If the possibility, or indeed, certainty of exportation of a product or article from a State determines it to be in interstate commerce, before the commencement of its movement from the State, it would seem to follow that it is in such commerce from the instant of its growth or production and in the case of coals, as they lie in the ground. The result would be curious. It would nationalize all industries. It would nationalize and withdraw from State jurisdic-

ANALYSIS OF ANTI-TRUST ACTS

Mr. Brennan, chief counsel of the Barnsdall Oil Corp., has made an extensive and exhaustive study of the Federal anti-trust acts and the decisions of the United States Supreme Court bearing on these statutes. He was one of the leading figures in the compilation of data, presented to the Federal Oil Conservation Board, relating to the legal phases of questions presented to the board. The Oil and Gas Journal feels the accompanying article by Mr. Brennan is deserving of the most careful consideration by the entire petroleum industry.

Apply to Production of Oil and Gas

and Has No Jurisdiction Over Activities of Operators in the
ney Who Has Made Exhaustive Study of Questions Involved

tion, and deliver to Federal Commercial control the fruits of California, and the South, the wheat of the West, and its meats; the cotton of the South; the shoes of Massachusetts, and the woolen industries of other states, at the very inception of their production or growth; that is the fruits unpicked, the cotton and wheat ungathered, hides and flesh of cattle on the hoof, wool unshorned and coal yet unmined, because they are in varying percentages destined for, and surely are to be exported to States other than those of their production."

In Case of Timber

In Goe vs. Errol, 116 U. S. 517, 29 L. Ed. 715, the power of a State to tax timber cut in its forests intended for interstate commerce, was presented. The Court had occasion to consider the exact time where the power of the State over the particular commodity ended, and the power of the General Government, under the Commerce clause, began. The court saying:

"There must be a point of time when they (goods) cease to be governed exclusively by the domestic law and begin to be governed and protected by the National law of commercial regulation, and that moment seems to us to be a legitimate one for this purpose in which they commence their final movement for transportation from the State of their origin to that of their destination. * * * Nor is exportation begun until they are committed to the common carrier for transportation out of the State to the State of their destination, or have started on their ultimate passage to that State."

Mr. Justice McKenna, in the opinion in Heisler vs. Thomas Colliery Co., supra, in commenting on the language just quoted, said:

"Until then, it was said that they were part of the general mass of property of the State, and subject to its jurisdiction."

State Jurisdiction

Oliver Iron Mining Co. vs. Lord, 262 U. S. 172, 67 L. Ed. 929, indicated the extreme reluctance of the Supreme Court of the United States to bring under the Commerce clause, any subject which properly should be a matter of State, and not National regulation. Here, the State of Minnesota had enacted an occupation tax on the business of mining ore, and in this particular case, practically all of the ore was intended for interstate commerce. Here the relation between the act of mining and the act of interstate shipment was most direct. The ore was dug, moved from the mines, loaded into cars and passed immediately into interstate commerce, by a continuous operation. It was contended that the Act amounted to an interference with interstate commerce. The court said:

"Mining is not interstate commerce, but like manufacturing, is a local business, subject to local regulation and taxation. * * * Its character in this respect is intrinsic. It is not affected by the intended use or disposal of the product, is not controlled by contractural engagements, and persists, even though the business be conducted in close connection with interstate commerce. * * * The ore does not enter into interstate commerce until after the mining is done, and the tax is imposed only in respect to the mining."

Coronado Coal Case

In United States Mine Workers of America vs. Coronado Coal Co., 259 U. S. 344, 66 L. Ed. 975, it was charged that defendants had entered into a conspiracy to restrain and monopolize interstate commerce in violation of the Federal anti-trust Act. The alleged conspiracy was based upon the destruction of part of the plaintiff's property, growing out of what the Court held to be, a local strike. The Court, in denying the relief, said.

"Coal mining is not interstate commerce and the power of Congress does not extend to its regulation, as such. * * * Obstruction to coal mining is not a direct obstruction to interstate commerce in coal, although it, of course, may affect it by reducing the amount of coal to be carried in that commerce."

In the Coronado case, the purely local character of coal mining, or any other similar operation, is decidedly emphasized. To the general point that the making of goods, or the mining of minerals is a subject of State and not of National regulations under the Commerce clause, we cite these cases: Delaware L. & W. Railway Co. vs. Yurkonis, 238 U. S. 439, 59 L. Ed. 1397; Heisler vs. Thomas Colliery Co., supra; Hammer vs. Dagenhart, 247 U. S. 251, 62 L. Ed. 1101; Oliver Iron Mining Co. vs. Lord, supra; Kidd vs. Pearson, 128 U. S. 1; Capital City Dairy Co. vs. Ohio, 183 U. S. 238; Crescent Cotton Oil Co. vs. Mississippi, 257 U. S. 129. The same principle apples to mining for oil.

Regarding Oil and Gas

In Jamieson vs. Indiana Natural Gas Co. (Ind.) 28 N. E. 76, it is said:

"The local character of such substance as natural gas is, we repeat, marked and peculiar. It is a natural product, and its source is in the soil. It is as strikingly local as coal or petroleum, and yet no one has ever questioned the power of a state to enact laws governing mining."

In Ohio Oil Co. vs. Indiana, 177 U. S. 190, 44 L. Ed. 729, which involved the constitutionality of a statute of the State of Indiana, regulating the production of oil and gas, the Supreme Court said:

"In view of the fact that regulations of natural deposits of oil and gas and the right of the owner to take them as an incident of title in fee to the surface of the earth, as said by the Supreme Court of Indiana, is ultimately but a regulation of real property, and they must hence be treated as relating to the preservation and protection of rights of an essentially local character. Considering this fact and the peculiar situation of the substances, as well as the character of the rights of the surface owners, we cannot say that the statute amounts to taking of private property, when it is but a regulation by the State of Indiana of a subject which especially comes within its lawful authority."

Child Labor Decision

This brings us to the two decisions which set this question at rest. In Hammer vs. Dagenhart, 247 U. S. 251, 62 L. Ed. 1101, there was involved the constitutionality of the first Federal Child Labor Act, prohibiting the transportation in interstate commerce of manufactured goods and of the prod-

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Refiners Increase Runs to Stills

Throughput of Mid-Continent Plants Is Now Slightly Greater. Decrease Had Been Expected

By Neil Williams

Crude runs to stills of Mid-Continent refineries totaled 417,575 barrels on November 1, according to The Oil and Gas Journal's monthly review of refinery operations. This was an increase of 8,600 barrels over the report of the previous month which showed runs amounting to 408,975 barrels.

These figures represented a gain of only 2 per cent, which was comparatively slight considering the total figures. However, October being a month of declining refinery markets, a substantial decrease in runs had been anticipated by the majority of the industry, and the increase, though small, came as a surprise.

While an increase was shown on the first day of the month, the trend of crude runs at this time is uncertain as a result of general Mid-Continent crude price reductions. Many refiners indicated that as soon as crude prices were cut they might reduce their runs and store the crude but so far there has been no effort to do this.

It can be said that during September and October, the crude market was so uncertain that refiners did not wish to be caught with much crude on hand and as a result were not much inclined to reduce their runs. Now with crude prices down, they perhaps may be in a better position to store what crude is not needed to meet their demand for refined products. This is possible as crude stocks at Mid-Continent refineries are believed to be at a minimum and as a result there will storage for surplus crude.

Gain in Few Plants

A fact not to be overlooked in the report is that most of the gain really was traceable to a comparatively few plants, some of which only were resuming normal operation after temporary shutdowns or reductions in runs. Had it not been for these plants, runs on November 1 would have shown very little change from those of October 1.

The largest single gain was by the Marland Refining Company, which set a record for its Ponca City plant by putting 27,500 barrels through its stills November 1. This was an increase of 5,500 barrels, or more than the total increase in Oklahoma. The Barnsdall Refineries, Inc., plant at Wichita, also accounted for 3,000 barrels of the total increase. This plant was rerunning on October 1, and the 3,000 barrels marked only a resumption of normal runs. Skelly Oil Company at Eldorado, also boosted its throughput to a normal level.

Another plant was added to the list of Mid-Continent refineries during October in the starting up of the Amarillo Producers & Refiners Corporation, at Borger, Tex. This plant is entirely new, making the second plant for the Texas Panhandle. It is running 1,000 barrels. North Texas runs also were increased by the Star Refining & Producing Company, which started up after a few months' shutdown. It is making a test run of Panhandle crude.

In Louisiana, the Crystal Oil & Refining Corporation has increased its runs from 7,800 barrels on October 1, to 9,500 barrels. This is in line with a general expansion program being undertaken by that company which will include the installation of two high pressure Jenkins cracking units.

More Than Last Year

Interesting in connection with the refinery review is the fact that crude runs now are 34,350 barrels greater than at this time last year. On November 1, 1925, the throughput was 383,225 barrels, which lacked only 75 barrels of equaling the low record of that year. On the other hand runs to stills the first of this month lacked only 2,420 barrels of equalling the high record of this year which was 419,995 barrels on September 1.

Only in one of the five refining centers of the Mid-Continent did runs to stills show a decrease this month, that being Arkansas. In that State some reduction was shown by nearly all plants. The Lion Oil & Refining Company cut runs 1,000 to 6,500 barrels. In Arkansas, the Ouachita Valley Refining Company has closed down the cracking plant which it has operated for two years. It has one Dubbs unit.

In the total figures Oklahoma refineries cut runs 3,400 barrels, Texas refineries 3,900 barrels, Kansas refineries 800 barrels, and north Louisiana 2,000 barrels.

A total of 111 plants are operating in the Mid-Continent, compared with 110 on October 1, and 120 on November 1, 1925.

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When Cushing Dominated Industry

A Year of Bitterness and Strife While the Field Was Flooding the Market With Over 70,000,000 Bbls. of Oil

By James McIntyre

The potentialities of the Seminole Field in Seminole County, Oklahoma, are so great that it is the opinion of some oil men, and conservative oil men, too, that Seminole would equal Cushing in peak production if permitted to produce without restraint. Cushing is known to have produced more than 300,000 bbls. a day for a short time, and the records of one big oil company show the peak production to have been 331,000 bbls.

It took three years for Cushing to reach the 300,000-bbl. stage, while Seminole was producing 118,000 bbls. a day, less than seven months after the first well was completed. It came so fast and the producing area spread so rapidly that the producers and pipeline companies, with the experiences of past years in the Glenn Pool and in Cushing in mind decided early to make an effort to apply common sense to the development of the area, which has resulted in the appointment of small committees representing the producing and the transportation interests and the appointment of Ray M. Collins, president of the Echo Oil Co., a conservative and experienced and non-interested oil man to act as umpire.

The action of the interested parties in getting together so quickly and coming to an agreement in so short a time is in contrast with the stormy days that attended the rise and development of the Cushing Field.

Cushing and Seminole

So many oil men have come into the industry since that memorable period that a review of some of the high lights of that time will be of interest in connection with the present Seminole situation.

Those were days when the best and the worst in men were brought out. Men lost all sense of proportion and perspective; things were said and done in heat and hate, which some of them would like now to forget, after the passage of 12 years. For those on the inside in that 12-month period from the spring of 1914 to the spring of 1915, probably furnished more excitement than any other year in their whole lives. The Cushing Field enriched a few oil companies and a small number of individuals who operated there, but it made it hard for Mid-Continent oil men operating in the older fields to keep out of the hands of the sheriff, during the period of 55-cent and later 40-cent oil.

The desperate plight of operators in other fields caused them to resort to measures they would have condemned under normal conditions, and the battle between the outsiders and the Cushing insiders and between producers and pipeline companies became a bitter one resulting in the Oklahoma State Conservation Commission being dragged into it and the appointment of umpires to prorate runs and regulate drilling. The turmoil continued until the "head" of the field was off.

Beginning of the "Tragedy"

The discovery of the Bartlesville sand in December, 1913, by the Prairie Oil & Gas Co., which drilled a Wheeler sand well on the Dan Tucker farm, in Section 3-17-7, deeper, and found a 2,000-bbl. initial production, put new life into the field which was originally opened in March, 1912, by C. B. Shaffer with a well on the Wheeler lease, in Section 31-18-7. The Wheeler sand lay at about 2,100 feet. Later the Layton sand around 1,400 feet was also found and developed, but the field had begun to decline when the Prairie discovered the Bartlesville sand around 2,600 feet.

In January, 1914, the production of Cushing averaged 19,250 bbls. a day. It increased to 38,080 bbls. as a daily average for February; to 71,000 bbls. in March; 74,500 bbls. in April and then it began its real upward trend with a jump to 141,500 bbls. a day in May. By December, 1914, Cushing had reached a production of 218,000 bbls. a day. In April, 1915, it reached its peak with a production over 300,000 bbls., and with a daily average in that month of 288,600 bbls. Thereafter it dropped rapidly and in December the production fell below 100,000 bbls. a day. The field is credited with 47,222,750 bbls. in 1914, and 70,704,854 bbls. in 1915.

Healdton Made Things Worse

Coincidental with the revival of Cushing in the latter days of 1913 came the development of the Healdton Field in Carter County, which was opened in September, 1913. The Healdton Field, with a shallow sand of great thickness developed very large wells and rose to nearly 100,000 bbls. a day in output. The big output in Healdton was so overshadowed by the tremendous Cushing production that it did not attract the attention it would otherwise have received.

But Healdton helped to make the producer-pipeline situation in Oklahoma and Kansas all the harder, and the two fields swelled the production of Oklahoma to proportions it never had reached before, with the few pipeline systems in the Mid-Continent totally unprepared to handle more than a fraction of the oil.

The pipeline companies in December, 1913, with an eye on Healdton and with the potentalities of the Bartlesville sand and possibly even deeper sands in the Cushing Field in mind, issued daily warnings to producers to go slow on development work. At the beginning of 1914, the Prairie Oil & Gas Co. was running an average of 120,000 bbls. a day from Kansas and northern Oklahoma. At the same time it was shipping about 113,500 bbls. It was storing the difference, and on January 31, 1914, held 42,960,881 bbls. in storage. The Gulf Pipe Line Co. was running about 20,000 bbls. and the Texas Pipe Line Co. of Oklahoma about 16,000 bbls. a day. Other pipelines handled an aggregate of 40,000 bbls. a day. The crude stock in Oklahoma and Kansas had mounted to a total of 51,850,701 bbls., of which about four-fifths was held by the Prairie Oil & Gas Co. At the beginning of the year the Prairie was shipping crude to its eastern terminals at Alton, Ill., and Whiting, Ind. The Gulf and Texas companies were shipping south to the Gulf Coast terminals. The price of crude oil of all grades in Oklahoma and Kansas was $1.03.

That was the situation in the beginning of 1914, which was one of the stormiest years in the history of oil in Oklahoma. There were only 53 wells drilling in the Cushing Field and only 683 drilling in all Oklahoma. By the end of May, 156 wells were drilling in Cushing and 957 drilling in all Oklahoma. Prominent among the operators in Cushing in that day were the Cortez, Eastern, Gypsy, Hill, Kathleen, McMan, Producers, Prairie, Charlton, Milliken, Keystone, Border Queen, Devonian, Yarhola, Pierce, Only, Lorett, Scioto, Twin State, Winona, Elwood, Quaker and Southwest Oil companies, while Gunsburg & Forman, T. B. Slick, B. B. Jones, Ross & Greis, W. C. McBride, John H. Markham, Jr., and J. A. Chapman's names figured in the drilling and production reports.

On February 3, crude was advanced to $1.05 per barrel, but thereafter a 5, 10 and 15-cent cut in the price brought it down to 75 cents per barrel by April 30, with Healdton crude at 50 cents. On September 12, the price dropped to 65 cents and on September 22 to 55 cents, which was the lowest posted price of the year. On February 18, 1915, the lowest posted price for Cushing crude, 40 cents, was reached and this price prevailed all over Kansas and Oklahoma.

James Blamed All Hands

Early in June, 1914, Horace G. James wrote a long review of the confused petroleum situation in The Oil and Gas Journal in the course of which he said:

"The producer creates a condition; the pipelines take advantage of that condition. What is needed is a level headed mediator. In spite of overproduction, with agitators running to Washington and demanding release from the grasp of the monopolistic hand of the Standard; the Government sending out commissioners to study a way to relieve the situation, that same Government issues orders for gusher wells to be drilled on Government controlled lands and the same oil men who are crying for aid of the Government are drilling and shooting gushers, and oil is running down ravines in shameful waste. It is an open secret that much of the agitation is for personal advantage."

Leading Up to Cushing

In the Romance of Petroleum and Gas, Vol. 2, page 116, the following appears which throws light on the situation in the period between 1900-1915 in the Oklahoma Field:

"After the Osage Nation became active; after the Glenn Pool was producing 125,000 bbls. a day; after the Cherokee deep sand territory was developed and the Cherokee shallow sand district at Chelsea, Alluwe, Childress and Delaware had reached its maximum of 60,000 bbls. a day there was naturally a great shortage of pipeline facilities. The Standard Oil Co. said it could not take all the oil as there was no market for it and gradually reduced the price to 35 cents per barrel, with at times only 25 per cent of the oil run from the producers' lease tanks. Drillings were suspended at intervals, tankage was overflowing and the Kansas and Oklahoma fields were in a distressing condition. Producers, except at short intervals when big wells provided heavy flush production, could not sell enough oil to more than pay expenses; in some instances not even that much. There was continual fussing between the pipeline companies and the producers. Charges of discrimination, favoritism, and scandalous goings on. Producers' associations besought legislation and drastic anti-discrimination and common carrier pipeline laws were adopted. The Corporation Commission held pipeline hearings with producers alleging frightful discrimination and violation of the statutes.

"When the potential production of the Cushing Field had reached 300,000 bbls. a day with only 40,000 bbls. a day being taken by the three trunk line pipeline companies (which had facilities to take no more) the producers immediately began the construction of steel tanks, pipeline pump stations and tank car loading racks. They quickly put 70,000,000 bbls. of crude oil in storage tanks, found buyers for enough oil to pay development expenses and created a new era in petroleum."

In this connection it might be interjected that at one time in the history of Cushing the McMan Oil Co. had a 50,000-bbl. daily production, much of which it was storing and John H. Markham, Jr., had 20,000 bbls. a day with a pipeline, pump stations and storage tanks to take

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RESULTS OF USE OF AIR AND AIR-GAS ON BRADFORD PROPERTIES DESCRIBED

By O. F. Thompson*

General Superintendent, Associated Producers Company

Our experience with water flooding dates back to 1913 when 184 wells were in operation on our Bingham property consisting of about 1,300 acres with an average daily net production of 48 bbls. From 1913 up to 1924 the production was increased to 138 bbls. net per day, the increase being due entirely to water pressure. During these years 129 wells were drilled and water let into 68 wells, including 27 old wells. Forty-four wells were abandoned and plugged in water zones. Since 1925 no further effort has been made to extend the water drive, air being substituted at that time.

We now have 13 air-intake wells distributed generally over the whole 1,300 acres. During 1925 some 38 wells were drilled. The net production in 1925 was 74,650, or a daily average of 205 bbls. This year 11 wells will have been drilled and the production for this year (the last two months estimated) will be 93,500 bbls, 256 bbls. daily average net bbls. The larger number of wells drilled in 1925 accounts largely for greater increased production than in 1926; but we find about 4 per cent of the increase for 1925 was due to air pressure. Careful computation shows that 20 per cent of production for 1926 is the result of air pressure. One group of 46 wells with a normal production of 50 bbls. January 1, shows on November 1 a production of 210 bbls, or a gain resulting from air of about 325 per cent. Under same conditions and length of time water drive increase would have been about 150 per cent.

The average depth of wells is about 2 050 feet We rarely case deeper than 375 feet, and we experience no difficulty from caving or sloughing of walls of open hole. Our sand, while it is quite uniform in thickness over the whole property, the average being about 47 feet, is not, however, of uniform solidity; 10 feet of the top is hard and close gas sand; 15 feet very fine soft open pay; 18 feet dark, hard course sand; 4 feet broken sand and shale. This soft open 15-foot streak of sand about 1,200 feet wide extends northeast and southwest of the full width of the lease. Here, as in other localities, any artificial pressure will move much more rapidly and in much larger volume than in the harder portion of the sand which is a difficult problem we have to combat.

Air Plant Described

Our air plant on the Simpson property consists of three 190 horse power Clark Brothers direct gas-driven compressors rated displacement of 2,835,000 feet per day. Air, or air-gas, under pressure ranging from 350 to 400 pounds, is distributed through nearly 2 miles of pipe ranging in size from 4-inch to 6¼-inch. Two-inch branch lines from these mains lead to points on every part of the lease. About the same amount of larger pipe is used for air-gas lines to the plant, it being necessary to carry a large volume of air-gas to the inlet valves of the engines, the mixture ranging from 42 to 80 per cent air. With these conditions

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*Before New York State Oil Producers Association, Olean, N. Y.

New York State Oil Producers Meet

Discuss Results of Water and Air Pressure in Increasing Recovery of Oil in Eastern Fields

OLEAN, N. Y., Nov. 6.—"New York State oil fields have more than doubled production," said Lewis H. Thornton, president of the New York State Oil Producers Association, at its annual meeting held at Olean, November 3.

In his annual address President Thornton said that this remarkable rejuvenation of old fields, which passed their peak output way back in 1882, marks a revolution in the history of oil production. It proves the contention of practical oil men that all the old oil fields in the United States are capable of reclamation, though not all probably by the same methods. It has a national significance in supporting the claim that there is no fear of a real oil famine so often threatened by the ultra conservationists; no danger of LaFollette's dollar gasoline.

The pioneer reclamation success by water drive in the New York fields and in Bradford, of air pressure in old wells in Ohio and Oklahoma; and later oil mining in old producing regions have immensely increased the estimated recoverable oil reserves in the United States.

Most Easterly Oil Wells

New York oil fields cover approximately 40,000 acres in Allegany and Cattaraugus Counties, extending into the west edge of Steuben, where in the Marsh Pool in West Union Township, are located the most easterly oil wells in the United States.

The first oil in America to attract civilized attention was in what is now southwestern New York at the Seneca Indian Oil Spring near the village of Cuba. In the very dawn of American history, only seven years after the landing of the Pilgrim Fathers at Plymouth, and a century and a half before the American Revolution, the Franciscan, Reverend de la Roche d'Allion, wrote of the oil from this New York petroleum seepage. His letter was dated July 18, 1627. Another French explorer, Gallinee', located the "Fountaine de bitume," on a rude map published in 1670. Joncaire personally visited this oil spring in 1721.

A test well for oil was drilled near this spring in 1857, two years before the Drake discovery well at Titusville, Pa. This oil spring test had only a small showing of oil, and, although it may have the distinction of having been the first test well in America actually drilled to discover oil, it has to bow to the Drake well as being the first paying producer in America.

Plans are under way for a tercentenary celebration next year of the discovery to Europeans of oil in America at the Seneca Indian oil spring. Oil from this New York spring was the first mentioned petroleum in America.

900 Wells Completed This Year

Before the water drive reclamation began in New York oil fields there was practically no new drilling, the region had long since been developed and was steadily on the down grade, soon to be junked and abandoned. Now there is an average of over two new wells being completed every day, an estimated total of 900 new wells in 1926.

There are several thousand oil wells in the State of New York today producing approximately 5,000 bbls. a day of the "highest grade oil in the world," selling at the highest prices paid for crude oil. Gains in this output are expected and it may not be long before New York promises an annual production of at least 2,000,000 bbls. Not over 6 per cent of the state's productive acreage is yet under "flood" operation, but the richest and most productive part of the field is naturally being reclaimed first. It is quite possible that production may continue from parts of our fields for better than 50 years.

So far as I know there are at this time only two leases in the state using compressed air with which to restore pressure, instead of water; but air pressure has great possibilities of success in our sands. The introduction of soda ash, and the mining of the oil rock also have their economic possibilities here. Oil reclamation processes are in their infancy, and should become more profitable as experimentation goes on. In more or less depressed times, which are bound to come in any business, let a contemplation of this encourage our optimism. It is reported that an old oil lease at Bradford, which had been profitably depleted of several thousand barrels an acre by the water drive process and about completely watered out, has been restored to substantial production by the introduction of compressed air. Theoretically, however, it might seem better to use air first and then water.

Much Deeper Oil Some Day

Moreover, our New York fields, and Bradford as well, have favorable prospects of oil from much deeper strata, the Medina sandstone at a few thousand feet and the Trenton rock considerably lower. Now that very deep drilling is successfully accomplished, much stranger things have happened in the oil business than the development of profitable deep production in the New York and Bradford Fields.

We have had a good year in oil with an average price of $3.85 a barrel for New York-Bradford "Pennsylvania" oil; but both United States and South American production is now substantially gaining.

Although consumption has steadily gained, every year showing a large increase over its predecessor, we seem to be entering again a temporary overproduction period. Storage stocks are again increasing after being somewhat depleted this year. The Mid-Continent crude market looks soft but consumption this coming winter bids fair to greatly exceed that of any previous winter, and if lower prices come they may not continue long.

Paper on Air

Papers on and discussions of soda ash, water and air methods of recovering more oil from the producing sand were the features of the meeting. Probably the most interest was shown in a paper which was read by O. F. Thompson of Bradford which advocated the use of air and and air-gas claiming that better results had been secured by this method than by the water flood and that the sand was left in a better condition for possible future recovery. Following the address there was considerable discussion centering around it and N. V. V. Franchot of Olean stated that the wonderful results secured on the Bingham lease and the increased production of it since 1925 amounting to 439,752 bbls. were a great tribute to Mr. Thompson.

The following officers and executive committee were elected after it had been stated that the president and secretary in charge during the past year had asked to be relieved: Harry E. Goodrich, Bolivar, president; N. V. V. Franchot, Olean, and L. H. Thornton, Wellsville, vice presidents; F. A. Herrick, Bolivar, secretary and treasurer; executive committee, John P. Herrick, Olean, chairman; F. E. Richart, Wellsville; A. L. Shaner, Bolivar; L. H. Thornton, Wellsville; N. V. V. Franchot, Olean; Forrest J. Wilson, Bolivar; J. A. Wilber, Bolivar; E. J. Atwood, Andover; N. J. Richardson, Wellsville; H. E. Goodrich, Richburg; Otto Walchli, Wellsville; J. M. Karl, Olean; Harry Bradley, Wellsville; F. A. Herrick, Bolivar.

L. H. Thornton of Wellsville presided at the meeting and Frank E. Richart of Wellsville read the secretary and treasurer's report. E. A. Booth, president of the Northwestern Producers Association, was present and was introduced.

The association endorsed the activities of the Pennsylvania Grade Crude Oil Association and it was decided to appoint three members of the association from each district to solicit new members for the Pennsylvania organization.

Two honorary members were elected: Thomas B. Love of Cuba, N. Y., who is 88 years old and has been a producer for 48 years, and Harry W. Breckenridge of Wellsville, N. Y., 79 years old, a pioneer pipeline man who has been connected with the industry for 55 years.

It was decided upon to take steps to protect the safety of oil workers in the New York state fields. It was also decided to appoint a committee to recommend a system of uniform accounting for oil field procedure.

It was voted to appropriate $350 for the erection of a monument to commemorate the Triangle No. 1 well, the first producing oil well in Allegany County, and to construct it at Petrolia Corners. This well is still pumping and is now owned by Piper & Wilson.

Future Meetings

The association voted to hold its meetings on the third Tuesday of May and the last Tuesday of October of each year. The Seneca Springs committee was continued in order to make plans for the celebration probably next year of the tercentenary of the discovery of the Seneca oil springs, the first evidence of oil on this continent discovered by the white men. L. H. Thornton stated that Robert H. Bartlett, chairman of the committee making the investigation, has found that the first test well was actually drilled 30 feet away from the spring. The cooperation of some of the big oil associations and the state of New York will be obtained in this celebration movement.

R. J. Alexander of Oil City, Pa., executive secretary of the Pennsylvania Grade Crude Oil Association, said the unusual value of the lubricants secured from Pennsylvania crude makes it necessary to secure a top price for the finished product "for there is nothing else in it to merit the premium which it receives." "Our little 2-6 per cent of the total crude oil production yields 11 per cent of all the lubricating oil produced and as a result Pennsylvania lubricants are really a factor in the market," he said. A survey made last year showed, he said, that there were then three places where Pennsylvania motor oils could be bought to every one in 1923 and that this year the comparison would probably amount to four to one.

An interesting fact was brought out by Paul D. Torrey, geologist of the Northwestern Pennsylvania Producers Association, that samples taken at Richburg show a sodium carbonate content and "that may account for the greater oil recovery there."

MARKED INCREASE IN RECOVERY OF OIL BY WATER DRIVE AND ADDED PRESSURE

By Frank E. Richart*
Wellsville, N. Y.

The Ebenezer Oil Co. commenced flooding, or what we now term restored pressure, in the early part of 1917, by the application of air to one well in the center of a 40-acre lease. This was continued for about seven months, the pressure ranging from 80 to 100 pounds. At the end of that time, the gas was diluted to such an extent that it would not keep the hot tube lighted so we changed and compressed gas and continued for about six months. At that time the man in charge in transferring some gasoline recovered in a drip set fire to the place and it burned completely.

Needless to say that owing to the low pressure, both of air and gas that we were able to maintain, our experiments were not successful. So we concluded we did not want to follow that line further and early in 1918 water was used in the same well and has continued as a water drive since that time and has been moderately successful. But we cannot help but feel that had this same lease been handled in the manner of today it would have been much more productive.

Our first experience with added pressure was on what we term the Moore farm when we had an accidental one well flood. Five wells had been drilled around this well and at the time we decided to apply pressure had so reduced that the production from the five wells was 3½ bbls. daily. Two of the five wells were pulled and equipped for pressure, 700 pounds being used. Three months afterwards the three remaining wells were doing 6.84 bbls. Needless to say we were immediately converted to the pressure idea.

Before our conversion to pressure we had been completely sold on the line flood method by a talk given by Forrest Dorn of the Forrest Oil Co. at a meeting of this association and I want at this time to acknowledge to Mr. Dorn full credit for any ideas which I may seem to be advancing as my own.

First Line Flood

Our first line flood was started during the summer of 1924, by drilling five wells 138 feet apart, on the line between our Emerson and York farms.

A 60-quart shot was used; sand averaged 50 feet; no oil was taken from any of these wells. The casing was left in and punched to let in water for a natural flow. The last well was completed in November of the same year.

In the fall of 1925 we commenced the drilling of the offset wells along each side of this five-well line and at the same time started work to equip these wells with pressure. On the day that the first offset (or producing well) was drilled in we were able to turn the pressure on Nos. 1 and 2 flood wells at about 300 pounds. This first well was drilled in on December 2, 1925, and for the balance of the month or 29 days did an average of 6.61 bbls.

The second well was drilled in on December 22 and the general conditions were identical with that of No. 1, same depth of sand, same distance from flood and its average for 29 days was 9.63, or 3 bbls. more than No. 1. The only way we can account for this increase is that the 20 days' pressure had had its effect on the second well.

Increase Due to Pressure

We fell that we are justified in attributing the increase to pressure as well No. 3, located back on the same side of the line as No. 1, 138 feet west, shows a production of 11.60 bbls. for a like 29-day period.

We proceeded to drill each side of this flood line, locating each well 125 feet back from the exact center between two flood wells, until four wells were completed on the York side and three on the Emerson. One location was not drilled on the Emerson side as an old well lo-

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*Before New York State Oil Producers Association at Olean, N. Y.

Preliminary Program for Institute

Group Sessions Will Be a Feature of the Seventh Annual Meeting to Be Held in Tulsa Next Month

The preliminary program just issued of the seventh annual meeting of the American Petroleum Institute to be held at the Mayo Hotel, Tulsa, Okla., December 7, 8 and 9, again stresses the importance of group sessions devoted to subjects of special and technical interest to the oil industry. In connection with several sessions other associations have co-operated in arranging the program.

Reports of standardization committees will feature the sessions devoted to standardization and improvements in oil field production methods and equipment. H. C. Dickinson, of the United States Bureau of Standards, will give further results of investigations on fuel characteristics and engine starting at the motor fuel sessions, at which T. A. Boyd, Jr., of the General Motors Research Corp., and others prominent in this work will be heard.

Several new groups are provided for this year's meeting. There will be a group discussing the transportation of petroleum products, dealing with the movement by tank car and automobile truck. A safety group is provided, arranged by the Petroleum Section of the National Safety Council and the Petroleum Safety Council of the Mid-Continent Oil & Gas Association, in co-operation with the institute. The usual fire prevention group meeting will be held.

Two important groups are, one on oil production problems, with the Mid-Continent Oil & Gas Association, the Chamber of Mines and Oil and the Rocky Mountain Oil & Gas Association co-operating, and one on petroleum refining and its problems, with the Western Petroleum Refiners Association and the National Petroleum Association co-operating. A symposium on corrosion is also arranged in conjunction with the Mid-Continent Section of the American Society of Mechanical Engineers.

Group sessions on a uniform method of oil accounting will be held, and the discussion of various departments of this important subject will go into features of the work, which has made great headway under the direction of W. M. Mattison, director of the institute's division on taxation and accounting. At a recent meeting of the general committee handling this work held in Chicago, the final form of uniform balance sheet was approved, changes being drafted into the form by a sub-committee meeting in New York November 5. The balance sheet will be submitted for the approval of the directors of the institute at the annual meeting. Several important oil companies have already adopted it.

A new group comprises that on oil geology. The American Association of Petroleum Geologists is co-operating with the institute in arranging the program for this group.

The only general session provided in the preliminary program is on the afternoon of the first day. Addresses will be delivered by W. S. Farish, president of the institute, and C. C. Herndon of the Skelly Oil Co.

One of the interesting features of the annual meeting is the annual dinner, which in no sense will be a banquet, and which will be held on the evening of the first day of the meeting at the Petroleum Exposition Grounds. It will be an oil country dinner of plain food, and the program specifically states no "soup and fish" clothes, no formal speeches, no assignment of places, and the price $1.50 a head. The institute is a democratic organization, and this gives everyone in the oil and allied industries in the neighborhood of Tulsa at that particular time a chance to "chow" at the common board and get acquainted. The only stimulant permitted, it is authoritatively understood, is good fellowship.

The preliminary announcement of the program follows:

Monday, December 6, 1926

On Monday, December 6, 1926, the day prior to the convening of the Seventh Annual Meeting, the following named committees will meet at the Mayo Hotel at the time and place indicated:

COMMITTEE MEETINGS

MORNING

9:00 AM Committee on Standardization of Specifications for Steel and Iron Pipe for Oil Country Tubular Goods. Room 312.
9:00 AM Committee on Standardization of Wire Rope and Manila Cordage. Room 313.
9:00 AM Committee on Standardization of Belting. Room 314.
9:00 AM Committee on Standardization of Rig Irons. Room 315.
9:00 AM Committee on Standardization of Standard Rigs and Derricks. Room 316.
9:00 AM Committee on Standardization of Rotary Drilling Equipment. Room 317.
9:00 AM Committee on Standardization of Pumping Equipment and Engines as Applied to the Production of Oil. Room 318.
9:00 AM Committee on Standardization of Cable Drilling Tool Joints. Room 319.
9:00 AM Committee on Standardization of Oil Field Boilers. Room 320.
9:00 AM Committee on Standardization of Oil Steel Storage and Production Tanks. Room 321.
9:30 AM Committee D-2 (A.S.T.M.) on Petroleum Products and Lubricants. Sixteenth Floor Banquet Hall.
10:00 AM Committee on a Uniform Method of Accounting. Room 301.
10:30 AM General Committee on Railroad Transportation; Mechanical Subcommittee; Car Service Committee, and Special Committee on Method of Testing Vapor Pressure. Writing Room, Mezzanine Floor.
10:30 AM Committee on Public Relations. Room 303.
11:00 AM Joint Meeting Committee on Testing Methods and Specifications and Committee D-2 (A.S.T.M.) on Petroleum Products and Lubricants. Sixteenth Floor Banquet Hall.

AFTERNOON

2:00 PM General Committee on Fire Prevention. Sixteenth Floor Banquet Hall.
2:30 PM Committee on Method of Calibrating Tank Cars. Room 302.
8:00 PM Special Correlating Committee on Gages and Gaging Practices. Room 312.

EVENING

Entertainment will be provided by the Tulsa Committee on Reception and Entertainment.

Tuesday, December 7, 1926

MORNING

10:30 AM Meeting of the Board of Councillors. Crystal Ballroom, Sixteenth Floor. (To nominate candidates for election as members of the Board of Directors.)

AFTERNOON

2:30 PM General Session. Crystal Ballroom.
The President's Address— W. S. Farish
Address— C. C. Herndon, Skelly Oil Co.
Report of the Board of Councillors and Election of Directors.

EVENING

8:00 PM Annual Dinner. Petroleum Exposition Grounds; transportation provided. Note—This will not be a banquet. It will be an oil country dinner of plain food. No dinner jackets, no formal speeches, no assignment of places. Tickets $1.50 each. Reservations must be made not later than December 4. Please send your application now, with check. Every oil man, and all men engaged in allied industries, invited. Opportunity will be given those attending to meet each other.

Wednesday, December 8, 1926

Note—There will be no general session on Wednesday. The morning, afternoon and evening will be devoted to group sessions, arranged by general topics, at which the various subjects will first be treated in addresses and papers by selected speakers. After each speaker has finished, opportunity will be given for general discussion of the subject.

MORNING

10:30 AM Meeting Board of Directors. Lounge Room, Sixteenth Floor. Luncheon for members of the board at noon in luncheon room V-W.

10:00 AM GROUP MEETINGS—

Group 1—General topic: Standardization and Improvements in Oil Field Production Methods and Equipment. Crystal Ballroom.

Belting—Report on Standard Specification, A. H. Riney, National Chairman.
"Recommended Field Practices on Belting," H. L. Trax, Gypsy Oil Co.
Oil Field Boilers—Report on Standard Specification, A. B. Steen, National Chairman.
"Proper Installation and Care of Boilers," (speaker to be announced).

Group 2—General topic: Motor Fuel. Junior Ballroom, Mezzanine Floor.

"Fuel Characteristics and Engine Starting," H. C. Dickinson, U. S. Bureau of Standards.
"Motor Fuel From Coal," (speaker to be announced).
"Natural Gasoline in Motor Fuel," G. G. Brown, University of Michigan.

Group 3—General topic: A Uniform Method of Accounting. Writing Room, Mezzanine Floor.

"Uniform Methods of Oil Accounting," report of committee, M. W. Mattison, Chairman.
"Allocation of Costs to Refined Products," J. H. Tuttle, Standard Oil Co. of California.
"The Pay-Out Status of Oil and Gas Producing Properties," H. G. Humphreys, Skelly Oil Co.
"Production Accounting," W. K. Cottrell, Mid-Continent Oil & Gas Association.

Group 4—General topic: The Transportation of Petroleum Products. Banquet Hall, Sixteenth Floor.

The program for this session will be announced later. It will deal with the transportation of petroleum products by tank car and automobile truck.

AFTERNOON

2:00 PM GROUP MEETINGS—

Group 1—General topic: Standardization and Improvements in Oil Field Production Methods and Equipment. Junior Ballroom, Mezzanine Floor.

Cable Drilling Tool Joints—Report on Standard Specification, Thomas Fleming, Jr., National Chairman.
"Recommended Practice and Proper Care of Cable Tool Joints in the Field," (speaker to be announced).
Standard Rigs and Derricks—Report on Standard Specification, W. W. Fondren, National Chairman.
"Selection and Erection of Derricks for Drilling and Pumping," H. H. Anderson, Shell Co. of California.
Oil Country Tubular Goods—Report on Standard Specifications, J. Edgar Pew, National Chairman.
"Recommended Method for Care and Use of Pipe in Fields," T. D. Davies, National Tube Co.

Group 2—General topic: Motor Fuel. Banquet Hall, Sixteenth Floor.

"Motor Gasoline of the Future," T. A. Boyd, General Motors Research Corp.
"Measurement of Antiknock Value of Gasoline," round table discussion, led by T. G. Delbridge, Atlantic Refining Co.

Group 3—General topic: A Uniform Method of Oil Accounting. Writing Room, Mezzanine Floor.

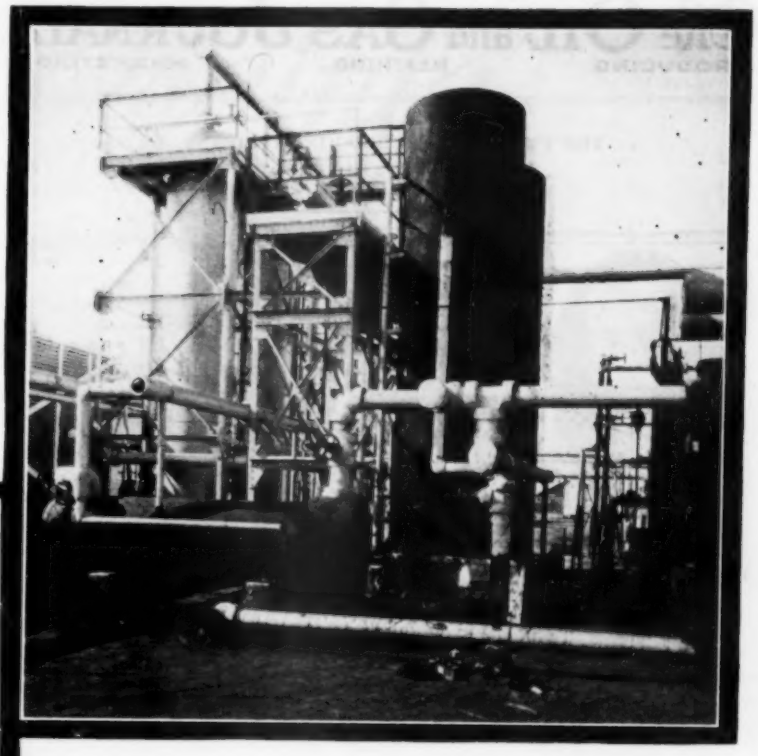
"Allocation of Marketing Costs to Products," S. A. Giraud, Humble Oil & Refining Co.
"Marketing Classification," H. J. Ralph, Indian Refining Co.
"Marine Accounting," F. S. Reitzel, Sun Oil Co.
"Natural Gasoline Accounting," George F. Winters, Phillips Petroleum Co.

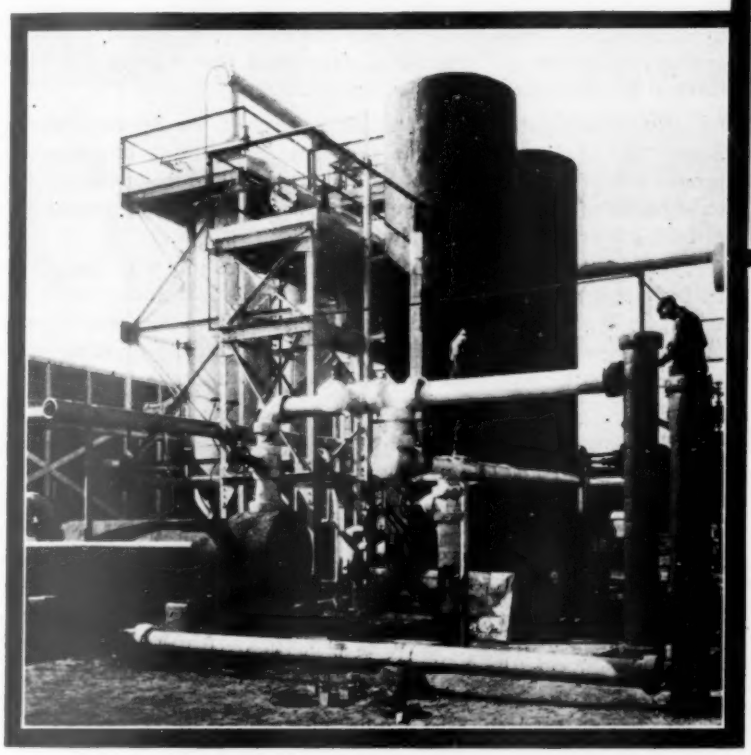
Group 4—General topic: Safety, Crystal Ballroom.

Note—The Petroleum Section of the National Safety Council and the Petroleum Safety Council of the Mid-Continent Oil & Gas Association are co-operating with the Institute in the holding of this group session.
"What the National Safety Council Does for Industry," W. H. Cameron, National Safety Council.
"Safety Work for the Oil Industry," (speaker to be announced).
First Aid Contest—The Second Annual First Aid Meet of the Petroleum Safety Council of the Mid-Continent Oil & Gas Association. Twenty oil company first aid teams of six men, each team trained by U. S. Bureau of Mines experts, will contest.

(Continued on Page 129)

ANOTHER NEWTON PLANT PROVES ITS SUPERIORITY IN REFINERIES





TWO VIEWS OF THE TEN MILLION-FOOT STANDARD NEWTON PLANT INSTALLED FOR THE MID-CONTINENT PET. COMPANY, AT THEIR WEST TULSA REFINERY.

F. B. KOONTZ, *Supt.*

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This plant is recovering from 92 to 95% gasoline from *THE UNCONDENSED REFINERY AND CRACKING PLANT VAPORS.* Newton Plants, in operation throughout the country, are proving their efficiency to scores of owners by higher recovery, and by making a better grade product. Any of our representatives, listed below, will be glad to explain, in detail, the advantages of Newton Plants and equipment. Write,

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NEWTON PROCESS MANUFACTURING COMPANY

FULLERTON, CALIFORNIA

The OIL and GAS JOURNAL

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MEMBER AUDIT BUREAU OF CIRCULATIONS

NO LONGER A GAME

The papers read and discussed at the "Management Week" meetings of the Mid-Continent section of the American Society of Mechanical Engineers reported in The Oil and Gas Journal last week and in this issue were valuable contributions to the knowledge of the industry. But these meetings called to discuss the elimination of waste and attended by engineers, geologists and technologists were no less remarkable as a demonstration that the oil industry is no longer a "game" but a science.

It is such alert, technically trained and field experienced young men who have been making over the petroleum industry. They are coming into the industry in every field and branch. They are bringing to it the best equipped minds of the day, thoroughly grounded in technical education and by actual service on the derrick floor and in the still house.

They are testing the theories of the lecture room and the laboratory by experience. They are constantly seeking to know the why as well as the how of petroleum problems. How well they are succeeding is attested by the progress the industry has made, a record for which they are mainly responsible.

Oil men still in their prime recall the day when petroleum technology was considered by practical operators on a par with "doodle bugs." Geologists were "rockhounds" and the only use for engineers was as surveyors.

But as the industry became a business instead of a game, involving the investments of hundreds of thousands instead of the individual stakes of adventurous wildcatters, and other great industries demonstrated profit from research there was an increasing disposition to give the technologists a hearing.

At first little more than tolerated, they have mastered the technique of the industry and by their researches carried it far beyond the bounds of the most skillful practice of early days.

Assertions that were regarded as hardly more than guesswork have been demonstrated by practice. Knowledge of the origin of petroleum may still be withheld from us but there has been assembled a mass of information concerning the migration of oil, the function of gas, the scientific principles of accumulation, movement and recovery, all of which is being drawn upon and added to from day to day in the more efficient operations.

And the immediate direction of these operations is being turned over more and more to the trained technologists of the industry who are making a continuing study in laboratory, field and refinery of scientific methods of greater recovery of crude oil and petroleum products.

The recent meetings in Tulsa of the petroleum division of the mining and metallurgical engineers and of the mechanical engineers were marked by an intensely and exclusively practical aspect. There was an obvious direct aim and purpose behind the discussion intended to further the actual work in which they were engaged. They were as different as possible from the more or less theoretical discussions that so often mark professional gatherings.

These men were in direct touch with industry and interested primarily in results. The papers and discussions on elimination of waste were particularly in that key. And the opening of the sessions to all branches of the industry and the readiness to hear criticism and comment brought a general attendance that proved the wide interest in scientific methods of the industry.

In fact one of the most notable results of the development of a scientific study of petroleum recovery and refining has been the promotion of a more general understanding and co-operation not only between the technical men of every division but among the different branches of the business.

Experience and information gained in dealing with petroleum in the production department is found to be of value in both the transportation and refining departments and the other way around. The geologist and the chemist discover they have a meeting point in their problems, as well as the mechanical and the metallurgical engineers.

There is so much to be learned about this mysterious product, its composition and its properties that it challenges the inquiry of all.

Happily there is being built up within the industry a body of specially trained and qualified men to carry on this study and make practical application of the science of petroleum research. Universities and colleges and technological schools are turning out a host of young men who are being attracted to the industry by this development. Most promising is the growing practice of these graduates in seeking to round out their acquired knowledge by actual work in the oil fields and refineries where they can as the saying is "learn the business from the ground up."

The technologists in the oil industry have won their place not as theorists but as workers. They have met and are meeting the actual problems of the business on the spot.

They are found out in the field personally supervising the work, guiding and directing the operations. They are familiar with equipment, its quality, purpose and results. Their judgment is consulted as expert and authoritative. They have established their title to responsibility and executive confidence.

In his paper on the elimination of waste in production one speaker stressed the necessity for "co-ordination of the various functions by the application of engineering methods, the collection and analysis of facts and estimates, planning of the work relating to the various activities, selecting the most suitable material and equipment, and developing a balanced routine for carrying out the co-ordinated activities."

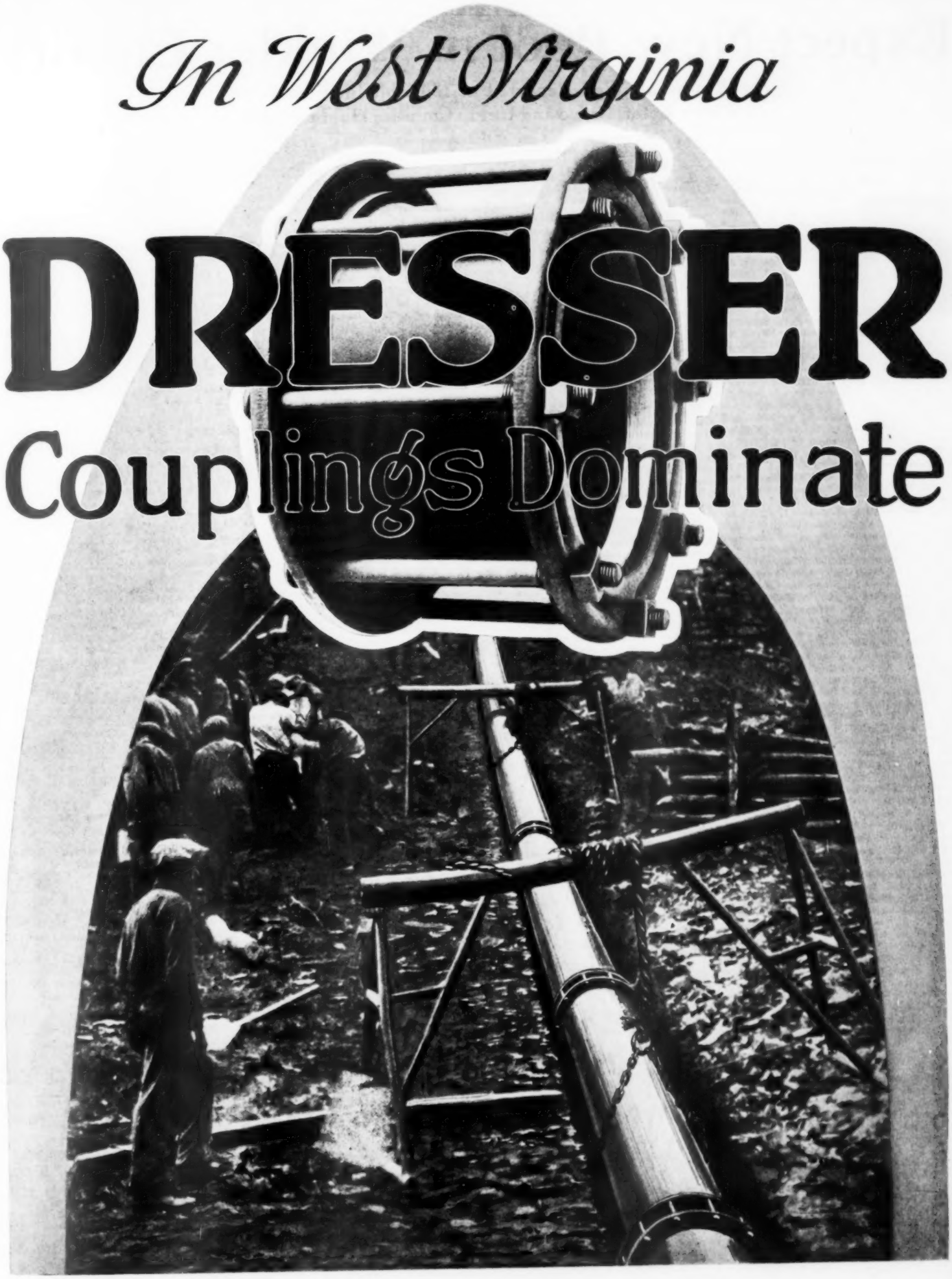
It is this planning and co-ordination, based on study and science, no less than experience, which the industry must require in increasing measure from its technical men as the need for greater efficiency grows.

Ultimately it will mean not alone increased recovery but better control of recovery which will assure a stabilization that will enable the industry to avoid the costly fluctuations of a less scientific age, prolonging the use of this wonderful product and assuring the highest utilization of its energy for the benefit of all.

In West Virginia

DRESSER

Couplings Dominate



Expect New Pool in Winkler County

Westbrook Well Reported at 130 Bbls. in Fourth Pay.
Pecos, Ector, Crane and Upton Counties Holding Interest

By C. D. Lockwood
Staff Correspondent, North Texas Fields

FORT WORTH, Tex., Nov. 8.—Winkler County, with its well-known Westbrook test flowing 130 bbls. from its fourth oil pay at 2,962-3,006 feet; Pecos County with its Transcontinental Oil Co. and Mid-Kansas Oil & Gas Co.'s No. 1 Yates still flowing approximately 100 bbls. Sunday from sand at 992-97 feet; Ector County, with its Cosden and others' No. 1-A Connell filling up rapidly with oil from a new sand found at 3,609 feet; Crane County, with its Gulf Production Co.'s No. 1 Crier-McElroy in Section 198 flowing 130 bbls. an hour after deepening to 2,795 feet, and the discovery well, No. 1 J. T. McElroy, increasing to 700 bbls. after deepening to 2,767 feet; Upton County, with the Marland Oil Co.'s No. 6 Estep in Section 18, Block 3, flowing 1,062 bbls. of pipeline oil at 2,335 feet; and Reagan County, with the Big Lake Oil Co.'s No. 91 University coming in for 1,920 bbls. initial and two others for 1,740 and 1,440 bbls. each—all of these important developments combined to hold the eyes of Texas oil men on the western part of the State during the past week.

At the same time, the Wichita Falls district was estab'ishing another record, although but a slight increase over last week, the current production of the counties grouped in that area amounting to 104,485 bbls. Montague County, of course, cotnributed its weekly boost to this total, the production having climbed to within 70 bbls. of the 10,000-bbl. a day mark. And one of the best wells of recent months in the Rock Crossing Pool of Wilbarger County was completed by the Phillips Petro'eum Co. in No. 4 Waggoner-L, SE cor. Section 45, Block 4. It had lime at 2,290-93½ feet and sand at 2,297-2,302 feet, then shale to 2,310 feet. The initial production flowing and swabbing was 1,109 bbls. This is about a quarter-mile extension of this particular pay, there being four pays in the Rock Crossing area.

Expect New Pool

To amplify a little on some of the important developments mentioned, Westbrook and Eastland Oil Co.'s No. 1 Hendricks, in the SE cor. Section 42, B'ock B-5, School Land, started flowing last week by heads from pay topped at 2,965 feet after drilling to 2,995 feet. The oil tests 29.6 degrees gravity, although at first reported to test around 38 degrees. Sunday the well flowed 120 bbls. and Monday was reported to have flowed 130 bbls. for the 24 hours ended at 7 a. m. that morning. It was deepened the last 3 feet to 3,006 feet Monday and no water was reported. Conservative oil men are of the opinion that this well has opened another west Texas pool and believe this sand will make a commercial producer at this location. It is being tubed to facilitate flowing.

In Pecos County, the Mid-Kansas and Transcontinental test was preparing to drill deeper as soon as storage is adequate. This well appears to have opened another shallow pool, this time west of the Pecos. The well flowed 127 bbls. Saturday and 85 bbls. Sunday.

The Jones County excitement is reaching a crisis this week with the Midwest Exploration Co.'s No. 1 Thornton diagonal southwest offset to the discovery well, drilling at 2,405 feet Monday morning. The Phillips Petroleum Co.'s No. 1 Winters had produced a total of 31,004 bbls. from the time it came in on Labor Day up to November 6, and daily output is still holding above 600 bbls. Hopes of an extension southwestward into Nolan County were dimmed when the Hucony Gas Co.'s No. 1 Sears in Section 291, northeastern corner of Nolan County, was abandoned as dry at 3,033 feet. It had top of lime at 2,405 feet, with surface elevation of 1,950 feet.

Oil in Ector Test

In Ector County, J. S. Cosden and others' No. 1-A Connell, in the NE of Section 13, Block 16, Public School Lands, topped a new pay at 3,609 feet Monday morning, the value of which is unknown at the time this is written, although oil was reported rising rapidly in the hole. The last previous report on this well was that it had 2,200 feet of oil and encountered a little salt water at 3,598 feet which filled 200 feet in the hole.

The McElroy Pool in Crane and Upton Counties, now owned exclusively by the Gulf Production Co., was the scene of further encouragement early this week when No. 1 Crier-McElroy, most easterly producer and the best in the pool, was deepened to 2,795 feet and increased to 120 bbls. an hour. Its production for the 24 hours ended at 7 a. m. November 7 was 2,647 bbls., and the Gulf's total output in Crane and Upton Counties was 4,860 bb's. for the same period. Monday morning's figures were 5,063 bbls. and all but about 100 bbls. of this was coming from the McElroy Pool. This includes Bill Dunning's well, which was taken over early last week by the Gulf.

It is the intention of the Gulf to deepen No. 1 Crier-McElroy 5 feet more, or to 2,800 feet. At 2,795 feet it is just 137 feet in the lime, and Bill Dunning's producer, the deepest in the pool structurally, is 185 feet in the lime. Gulf's No. 1 J. T. McElroy, the discovery well, was deepened successfully, having increased 180 bbls. to a flow of 680 bbls. at 2,767 feet. The Gulf is moving in tools for the two new McElroy tests, No. 4 J. T. McElroy in the C SW NW Section 197, Block F, and No. 5 J. T. McElroy in the C NE NW, same section.

Bill Dunning is also moving in material for two tests in Upton County, east of the McElroy Pool and located on the acreage involved in his deal with the Gulf Production Co., reported last week. One of these is in the C NW Section 134, Block E, and the other is in the C SW of Section 155, same block. This latter location was changed from the C NE of the same section, where the stake was originally driven. No further developments were reported concerning the Gulf-Dunning purchase this week.

Upton County Wells

In Upton County, Marland Oil Co.'s No. 6 Estep, one location north of the SW cor. of Marland's Estep lease in Section 18, Block 3, actually flowed 1,062 bbls. November 6, and No. 5 Estep, in the SW cor. of the lease, was flowing 600 bbls. Both wells were making considerable water. Dixie Oil Co.'s No. 9 Burleson, south offset to Marland's No. 5 Estep, was drilled to 2,350 feet in lime and tested 300 feet of water per hour and 5 bbls. of oil a day. Preparations were being made Monday to pull the pipe and plug it. Independent Oil & Gas Co.'s No. 2 Burleson, southeast offset to Marland's No. 5 Estep, dropped off to a low figure when the Marland wells came in and was being swabbed. Monday morning's report showed it swabbing 100 bbls. in five hours. Same company's No. 4 Burleson, east of No. 2, made 55 bbls. Sunday at 2,215 feet.

In Archer County, Gates & O'Donohue's No. 1 W. R. Pace, 150 feet from the south and east lines of the east 80 acres of Block 13, Harris Club Ranch Subdivision, was drilling at 600 feet. Simms Oil Co.'s No. 12 Turbeville-A in the NE cor. Section 172, Robert Carson Survey, found a new sand at 1,546-47 feet showing oil. Moore & Mevilia's No. 1 Abercrombie in Block 15, Harris Club Ranch Subdivision, found a sand showing oil at 1,430-31 feet and was reaming to test.

In Throckmorton County, Texon Oil & Land Co. and Marland Oil Co.'s No. 1 Reynolds, Section 60, B. B. B. & C. Survey, had gas and water at 973-85 feet. The gas was strong enough to blow the salt water over the crown block, but it was cased off and the well was drilling at 1,200 feet. Gulf Production Co.'s No. 1 J. H. Lee, in this county, had a hole full of water at 3,170 feet and was straightreaming to 3,150 feet.

In Shackelford County, Gulf Production Co.'s No. 1 J. S. Willis-A had 1,000 feet of water and 25 feet of oil in the hole at 3,585 feet after standing 12 hours. Top of the lime was 3,568 feet, and the show of oil was at that depth.

In Foard County, Gulf Production Co.'s No. 1 A. T. Miller had a hole full of water at 2,649 feet and was underreaming 6-inch to 2,640 feet.

This map shows about 25,000 acres of the 28,000 acres involved in the recent purchase by the Gulf Production Co. of the Crane and Upton County holdings of W. H. Dunning, Jr., of Fort Worth. There is some additional acreage north.

The block shown by the shaded lines has been the scene of two large deals within two weeks, the purchase of the working interest by the Gulf for a rumored consideration of nearly $2,000,000 and a royalty deal involving more than a million dollars.

The little pool in the northwest corner is the area opened by Church & Fields.

NORTH CENTRAL TEXAS
Estimated Production
Week Ending November 6, 1926

	This Week	Last Week
Ranger District—		
Brown County	13,100	13,080
Callahan County	4,100	4,110
Coleman County	1,630	1,635
Comanche County	1,825	1,750
Palo Pinto County	400	410
Ranger	5,775	4,765
Shackelford County	8,910	9,760
Stephens County	12,140	12,100
Total Ranger district	47,850	47,610
Wichita Falls District—		
Electra	17,500	17,800
Burkburnett	11,650	11,640
Iowa Park	4,700	4,630
Archer County	34,780	35,440
Clay County	745	760
Wilbarger County	13,875	13,515
Montague County	9,930	9,640
Young County	8,480	8,440
Jack County	245	235
Throckmorton County	1,720	1,310
Baylor County	125	140
Cooke County	735	820
Total Wichita Falls dist.	104,485	104,370
West Texas District—		
Big Lake Field	30,055	29,685
Crane County	5,950	4,300
Crockett County	1,120	1,060
Garza County	7	7
Howard County	710	715
Jones County	680	657
Mitchell County	3,650	3,520
Scurry County	48	50
Upton County	12,220	11,200
Total West Texas district	54,440	51,194
Grand total	206,775	203,174
Increase	3,601	

WEST TEXAS COMPLETIONS

Crane County

Independent Oil & Gas Co.'s No. 1 Hughes pumped 58 bbls. at 2,310-2,472 feet.

Crockett County

Republic Production Co.'s No. 1 Powell pumped 210 bbls. at 2,616-35 feet. H. F. Wilcox Oil & Gas Co.'s No. 1 University was dry and plugged at 4,935 feet.

Ector County

Leigh Taliaferro's (Wentz) No. 1 Henderson was dry and abandoned at 3,502 feet.

Reagan County

Big Lake Oil Co.'s No. 91 University flowed 1,920 bbls. at 2,925-40 feet; No. 95 University flowed 1,740 bbls. at 2,890-2,911 feet, and No. 97 University flowed 1,440 bbls. at 2,860-2,905 feet. Texon Oil & Land Co.'s No. 40 University, Group 1, made 160 bbls. at 2,895-2,965 feet; No. 5 University, Group 2, was dry and abandoned at 3,310 feet.

Upton County

Amerada Petroleum Corp.'s No. 1 E. S. Hughes was shot with 120 quarts at 2,109-2,223 feet, total depth 2,237 feet, and made 210 bbls. of fluid afterward, 40 bbls. of which was oil. It may be plugged and abandoned. Humble Oil & Refining Co.'s No. 1 J. T. McElroy in the C SW Section 30, Block 40, T. & P. Survey, was officially abandoned at 3,974 feet.

Independent Oil & Gas Co.'s No. 3 Taylor flowed 336 bbls. at 2,030-43 feet;

No. 9 Taylor pumped 150 bbls. at 2,068-95 feet; No. 3 Burleson pumped 27 bbls. at 2,200-50 feet; No. 4 Burleson flowed 150 bbls. of oil and 10 bbls. of water through a ½-inch choke from same at 2,315 feet; No. 4 Emma Wooley pumped 60 bbls. from pay topped at 2,145 feet after plugging back from 2,236 feet to 2,225 feet.

Marland Oil Co.'s No. 5 Estep flowed 1,400 bbls. of oil and 200 bbls. of water initially at 2,326 feet; No. 6 Estep flowed 1,062 bbls. initially at 2,335 feet, with an additional 5 per cent water and b.s.; No. 31 Burleson pumped 210 bbls. at 2,171-90 feet.

NORTH CENTRAL TEXAS COMPLETIONS

Archer County

Continental Oil Co. and Maer's No. 3 Kemp & Kempner was dry and abandoned at 1,820 feet with no sand. Continental Oil Co. & Staniforth's No. 10 Kemp & Kempner was also a failure at 1,799 feet.

American Refining Co.'s No. 7 Turbeville was another duster at 1,603 feet. It had dry sand at 1,496-98 feet; No. 8 Turbeville was plugged as dry at 1,503½ feet, having drilled dry sand at 1,492-95 and water sand 1,503-03½ feet. L. T. Burns' No. 3 Turbeville had a small show of oil at 1,515-22 feet and was estimated good for 15 bbls. of oil and 5 bb'ls. of salt water. Reese Carter's No. 1 Wilson made 15 bbls. of oil and 6 bbls. of water initially from sand at 1,513-15 feet, but was not completed. Magnolia Petroleum Co.'s No. 7 Rutty-B made 8 bbls. at 898-906 feet. Marland Oil Co.'s No. 8 Turbeville was shot with 15 quarts at 1,502-18 feet and made 25 bbls. initially.

Marland Oil Co., Bass & Dillard's No. 2 Perkins and others made 15 bbls. of oil and 2 bbls. of salt water at 1,758-60 feet. McCarty Oil Co.'s No. 21 Wilson made 35 bbls. at 1,590-1,607 feet. O'Neil and others' No. 1 Wilson was dry and abandoned at 1,558 feet. Petroleum Producers Co.'s No. 4 Turbeville swabbed 1,435 bb'ls. initially and pumped 350 bbls. at 1,498-1,521½ feet; No. 5 swabbed 350 bbls. and pumped 150 bbls. at 1,500-26½ feet; No. 6 swabbed 500 bbls. and pumped 200 bbls. at 1,501-24½ feet.

Riner & Bailey's No. 1 Parkey had sand at 1,590-91 feet, total depth 1,591½ feet, and had 75 feet of oil in the hole. Simms Oil Co. and Burns' No. 2 Turbeville-A was dry and plugged at 1,770 feet. Tidal Oil Co.'s No. 2 Turbeville swabbed 200 bbls. estimated at 1,510-20 feet.

The location for Atlantic Oil Producing Co. and Holmes' No. 1 Thomas was abandoned. Bridwell & Heydrick's No. 2 Abercrombie & Taylor-B made 175 bbls. at 1,341-53 feet. Humble Oil & Refining Co.'s No. 19 Hamilton made 7 bb'ls. at 1,258-65 feet. Jeffer & Jeffers' No. 1 Andrews was dry and plugged at 1,095 feet. Magnolia Petroleum Co.'s No. 1 Graham was a duster at 1,512 feet. So was Mid-Tex Oil Co.'s No. 1 Baggett at 650 feet.

Roxana Petroleum Corp.'s No. 7 Abercrombie & Taylor made 27 bbls. at 1,322-50 feet. Wanderer Oil Co. and Continenental Oil Co.'s No. 1 Ray was dry and abandoned at 1,550 feet.

Brown County

Bowers' No. 2 Eads had sandy shale at 1,304-13 feet and sand at 1,313-22 feet estimated good for 125 bbls. Bradstreet and others' No. 2 Stout was shot with 60 quarts at 1,154-96 feet and made 125 bbls. afterward.

Huffman's No. 7 Kilgore pumped 10 bb'ls. at 1,244-56 feet. Humble Oil & Refining Co.'s No. 1 J. H. Fry swabbed 150 bbls. at 1,328-32 feet and was completed; No. D-6 Kilgore pumped 75 bbls. at 1,185-98 feet. Kone Production Co.'s No. 11 Foster was estimated good for 50 bbls. at 1,194-1,215 feet. William Lester's No. 7 Fry made 526 bbls. initially at 1,304-12 feet. McLester Oil Co.'s No. 10 Josie Wooldridge made 115 bbls. at 1,236-51 feet; No. 15 W. M. Wooldridge made 147 bbls. at 1,258-82 feet.

Maer & Staniforth's No. 1 Turner was dry and abandoned at 1,809 feet. Pandem Oil Corp.'s No. 6 Westerman was shot with 20 quarts at 1,253-67 feet and estimated good for 5 bbls. on the pump. Ray Oil Co.'s No. 2 Stout was shot with 20 quarts at 1,166-95 feet and estimated a

WELL WEST OF SEMINOLE FIELD MAKES 1,919 BBLS. IN 18 HOURS

A wildcat well of the Gypsy-Westland-Amerada Companies, 9 miles west of the producing limits of the Seminole Pool in Oklahoma, was the surprise of the week. It is producing from what is supposed to be a lime above the Wilcox sand, and made 1,919 bbls. the first 18 hours. The majority of the wells in Seminole have been pinched in and production lowered about 14,000 bbls. daily.

Colder weather is affecting operations in the Texas Panhandle where production reached 158,235 bbls., or 590 bbls. above the previous week.

The Westbrook well, in Winkler County, Texas, is flowing 130 bbls. from a fourth sand. The Pecos County well of the Transcontinental and Mid-Kansas companies is flowing 100 bbls. The Cosden well, in Ector County, is filling with oil from a new sand. Two Crane County wells deepened, increased their output, and Upton County had one flowing 1,062 bbls.

In California, the Marland company completed two more wells at Seal Beach estimated at 1,000 bbls. each, but they were killed to drill deeper.

At Spindletop, the Yount Lee company's No. 11 Gladys, on the west side, is making 3,500 bbls. from 4,000 feet.

In the Lawson area, Arkansas, the Simms-Sun Oil Co.'s No. 1 Simmons made 25,000,000 feet of gas and sprayed some salt water and went dead. Another test will be drilled.

OKLAHOMA

The Seminole Field produced 103,937 bbls. on Monday of this week. The slight drop was due chiefly to pinching in of the wells, and there was very little natural decline. No additional wells were completed on Monday.

The Amerada Petroleum Corp. has purchased from the Westland Oil Co. a one-quarter interest in the new Pottawatomie County well which was owned jointly by the Gypsy Oil Co., and the Westland concern. The purchase includes a quarter interest in 280 acres close to the well. The well (No. 1 School Land, in Section 16-9-5) made 1,919 bbls. the first 18 hours.

The wildcat well of the Tidal-Osage Oil Co., No. 1 Kenyon, in Section 3-8-4, has been drilled deeper and is now 4,177 feet deep. It swabbed 75 bbls. on Monday of this week. It is now thought that this formation is the Hunton lime. Top of the Hunton was 4,128 feet.

CALIFORNIA

LOS ANGELES, Calif., Nov. 9.—The Marland Oil Co. finished two more wells in the new Seal Beach Field, doing approximately 1,000 bbls. each, but killed both in order to drill deeper.

ARKANSAS

SHREVEPORT, La., Nov. 9. — Six-inch casing was shot at 2,520 feet at Simms Oil Co. and Sun Oil Co.'s No. 1 Simmons, Section 9-18-13, in the Lawson

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40-bbl. well, total depth being 1,201 feet. The location for Schaffner & Ramsey's No. 2 Henson was abandoned. The Texas Company's No. 5 Hickman made 75 bbls. at 1,204-20 feet. Wentz Oil Corp.'s No. 2 Shore made 65 bbls. at 1,309-14 feet.

Coleman County

Altitude Oil Co.'s No. 1 Dibrell was shut down for orders at 2,050 feet, with dry sand at 1,592-1,605 feet. Bradstreet and others' No. 1 Teagle was junked at 1,310 feet and the rig was skidded. Flannigan and others' No. 1 Overall was dry and abandoned at 3,625 feet. Gray's No. 1 Hay was also a duster at 1,543 feet.

Cooke County

American Refining Co.'s No. 1 Dennis made 70 bbls. from sand at 1,186-1,252 feet, total depth 1,286 feet. Hooser Oil Co.'s No. 8 Dennis pumped 58 bbls. from sand at 1,192-1,267 feet; No. 9 made 40 bbls. from broken sand and shale at 1,235-1,301 feet. Lynch, Stahl & Burris' No. 3 Danglemayer had sand at 794-809 and 827-33 feet, total depth being 834½ feet. It made 10 bbls. of oil and 12 bbls. of salt water. Same interests' No. 4 pumped 14 bbls. of oil at 817-21 feet.

Callahan County

Ackers & Wilmot's No. 1 Snyder was dry and abandoned at 1,050 feet.

Comanche County

Wolf and others' No. 1 Guinn was completed for 25 bbls. at 2,810-45 feet.

Eastland County

Texas Development Co.'s No. 2 Lewis was dry and abandoned at 1,636 feet. It had oil, gas and water in sand at 1,590-1,636 feet. West Adams Oil Co.'s No. 1 Ramsower was reported last week as Continental Oil & Gas Co.'s No. 1 Ramsower. It flowed 502 bbls. at 3,720-23 feet.

Montague County

Continental Oil Co.'s (formerly Texhoma Oil & Refining Co.'s) No. 7 Bouldin-A swabbed 205 bbls. in 14 hours and later pumped 167 bbls. in 24 hours at 1,077-96 feet, total depth 1,097 feet; No. 13 Howard and others pumped 54 bbls. from broken sand at 975-89 feet and sand 989-92 feet; No. 1 Howard and others-B pumped 22 bbls. of oil and 7½ bbls. of water at 1,370-75 feet; No. 18 Rowland made 115 bbls. initially from sands at 1,047-75 and 1,076-78 feet; No. 11 Rowland-A was dry and abandoned at 1,424 feet; No. 4 Rowland-B pumped 269 bbls. at 1,064-95 feet; No. 2 Rowland-C pumped 146 bbls. at 1,041-60 and 1,087-1,102 feet; No. 4 Salmon and others was a failure and plugged at 991 feet.

Farlan Oil Co.'s No. 5 Maddox had sand at 882-98 feet good for 60 bbls. F. H. E. Oil Co.'s No. 7 Howard and others-A made 12 bbls. at 1,141-52 feet. J. J. Perkins' No. 1 Salmon made 21 bbls. at 897-910.

Pure Oil Co.'s No. 3 Oldham-A was dry and plugged at 2,699 feet; No. 4 Rowland-B swabbed 107 bbls. the first seven hours at 1,053-64 and 1,089-1,110 feet. The Texas Company's No. 3 Gist-B pumped 60 bb'ls. daily for three days at 856-71 feet and then gas broke in and it was completed as a gasser good for 5,000,000 feet. Same company's No. 2 Maddox-B swabbed 100 bbls. at 2,083-87 feet; No. 32 Oldham swabbed 63 bbls. in 11 hours at 1,371-75 feet.

Palo Pinto County

Morrissey & Rowen's No. 1 Satterfield heirs was dry and abandoned at 980 feet.

Shackelford County

Gwinnup and others' No. 1 Poindexter was a failure at 1,510 feet. Halmack Oil Co.'s No. 1 Moberly made 20 bbls. at 959-78 feet. Harris' No. 1 Matthews was a duster at 1,230 feet. Hyde & James' No. 1 Moberly in Section 59, Block 10, was completed for 829 bbls. of oil and 2,500,000 feet of gas at 1,128-40 feet. Lee and others' No. 1 McLemore was dry and plugged at 1,202 feet.

Milham Corp.'s No. 1 Moore was shut down for orders estimated good for 40 bbls. at 2,145-48 feet. Republic Production Co.'s No. 1 Matthews swabbed 20 bbls. at 999-1,010 feet, total depth 1,012 feet. Roeser & Pendleton and Marland Oil Co.'s No. 3 Cook A-60 was dry and abandoned at 1,195 feet; No. 34 Cook A-84 made 125 bbls. at 1,325-30 feet; No. 1 Cook E-60 was completed for 990 bbls. at 1,135-51 feet. Roeser & Pendleton's No. 1 Cook B-60 made 75 bbls. at 1,312-24 feet.

Throckmorton County

Humble Oil & Refining Co.'s No. 1 Bowman made 1,500,000 feet of dry gas at 868-71 feet and was completed. Red Bank Oil Co.'s No. 2 Parrott flowed 550 bbls. at 3,939-72 feet. Hoffer Oil Corp.'s No. 1 Mathews was dry and abandoned at 1,533 feet.

Hotham & Cutcher's No. 1 Willis was temporarily abandoned at 1,379 feet. Magnolia Petroleum Co.'s No. 12 Cook had broken sand at 1,864-72 feet good for 1 bbl. Wilson Drilling Co.'s No. 1 Nitschke and others was dry and abandoned at 1,910 feet.

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WEST TEXAS WILDCATS

Week Ending November 6, 1926

ANDREWS COUNTY

Company, Farm and Location—	Remarks—
A. G. Carter & Zweifel's No. 1 Cowden, C SE Sec. 18, Blk. A-52, Pub. Sch. Ld. Sur.	Rig.

BREWSTER COUNTY

Green Valley Oil Co.'s No. 2 Wilson	Spudding.
John C. Roseborough, Jr.'s No. 1 Skinner, C Sec. 39, Blk. 4, T. & S. L. Sur.	Shut down 1,290 ft.

COCHRAN COUNTY

J. C. Whicker's No. 1 G. C. Landon	Drilling 360 ft.

COKE COUNTY

Lipan Oil Co.'s No. 1 E. C. Rawlings, CNL Section 290, Blk. 1-A, H. & T. C. Sur.	Fishing tools 2,706 ft.

CONCHO COUNTY

The Exploration Co.'s No. 1 Hartgrove, Blk. 240	Shut down 1,115 ft., 4 bailers salt water per hour.
Culbertson Bros.' No. 1 W. S. Sec, NE SW Blk. 742	Drilling 1,815 ft.
Gene Mays and others' No. 1 Hartgrove, NW SW Sec. 312, Blk. A-1173	Shut down for casing 998 ft.

CRANE COUNTY

Duffy Bros. and others' No. 1 Cowden Bros., Sec. 65, Blk. X, C. C. S. D. & R. G. N. G. Sur.	Top lime 2,900 ft., drilling 2,954 ft.
Gulf Production Co.'s No. 1 State Lasseter, SW cor. Sec. 35, Blk. 30, University Sur.	Top lime 2,894 ft., drilling 2,900 ft.
Gulf Production Co.'s No. 4 Crier-McElroy, SW cor. Sec. 198, Blk. F	Rigging up.
Gulf Production Co.'s No. 2 T. J. McElroy, C SW SE Sec. 203, Blk. F, C. C. S. D. & R. G. N. G. Sur.	Drilling 2,375 ft.
Gulf Production Co.'s No. 4 J. T. McElroy, C SW NW Sec. 197, Blk. F	Moving in rig.
Gulf Production Co.'s No. 5 J. T. McElroy, C NE NW, Sec. 197, Blk. F	Moving in rig.
Independent Oil & Gas Co.'s No. 5 Taylor, Sec. 6, H. T. Sapp Sur.	Bridged after shot.
Independent Oil & Gas Co.'s No. 7 Taylor, Sec. 6, H. T. Sapp Sur.	Set 5-in. 3,100 ft.
Independent Oil & Gas Co.'s No. 8 Taylor, Sec. 6, H. T. Sapp Sur.	Top pay 2,378 ft., shut down 2,417 ft., 2,000 ft. fluid in hole.
Independent Oil & Gas Co.'s No. 9 Taylor, Sec. 6, H. T. Sapp Sur.	Swabbed 75 bbls., in 6 hrs., 2,095 ft.
Independent Oil & Gas Co.'s No. 10 Taylor, Sec. 6, H. T. Sapp Sur.	Drilling 2,200 ft., 1,000 ft. oil in hole.
Magnolia Petroleum Co.'s No. 3 O'Keefe (Univ.), NW NW Sec. 38, Blk. 30, University Sur.	Pulling big pipe 2,814 ft.
Magnolia Petroleum Co.'s No. 1 State-Lasseter, Sec. 35, Blk. 30, University Sur.	Rigging up.
Magnolia Petroleum Co.'s No. 2 University	Drilling 635 ft.
Magnolia Petroleum Co. & Hardwick's No. 1 University	Top salt 1,110 ft., drilling 2,400 ft.
Marland Oil Co.'s No. 1 Cowden, SE cor. Sec. 81, Blk. X, C. C. S. D. & R. G. N. G. Sur.	Top salt 660 ft., drilling 2,120 ft.
Marland Oil Co. & F. P. Zoch's No. 1-B Cowden, SE cor. NE Sec. 81, Blk. X	Building rig.
Marland Oil Co.'s No. 2 Hughes-Gibbs, Sec. 93, Blk. Y, C. C. S. D. & R. G. N. G. Sur.	Drilling 1,665 ft., running 6-in. 2,205 ft.

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Gray County Tests Feature Panhandle

Colder Weather Affecting Operations. Production of Field Increases 590 Bbls. to 158,235 Bbls.

By C. D. Lockwood
Staff Correspondent, Panhandle Field

Gray County wildcatters held the limelight in the Texas Panhandle during the past week as production barely held its own and faced a probably sharp decline during the coming week because of freezing temperatures which descended over the Amarillo district during the early part of this week.

The daily average estimated output was 158,235 bbls., a gain of 590 bbls. over the previous week, but there were 23 new producing wells on the list and that cut the average per well down to 252 bbls. A month ago it was 276 bbls.

In Gray County, the Canyon Oil & Gas Co.'s No. 1 Jackson, in the NW cor. of Section 60, Block B-2, topped a pay at 2,880 feet which put 500 feet of oil in the hole in 2 hours. The well was shut down to straightream before running 6-inch pipe to drill in. It is a mile due south of the old Clark well in the NW cor. of Section 37, Block 3, which is still making about 10 bbls. daily and which was heretofore regarded as probably the southeastern edge of the Pampa Pool. The Canyon well is about 1½ miles southeast of the main producing area of the pool. This well previously had a show of heavy oil with 4,000,000 feet of gas at 2,809-20 feet.

Will O'Brien's No. 1 Morse, in Section 68, Block 25, (carried as Nabob Oil Co.,) located about three-quarters of a mile south of the old Holmes well, No. 2, drilled dry granite wash at 2,595-2,600 feet.

The Roxana Petroleum Corp.'s No. 1 Finley, in the B. E. Cheney Survey, about 5 miles east of the Pampa Pool, and the only commercial well in the Panhandle producing from a pay below sea level, was put on the pump and made 120 bbls. the first 24 hours at 3,012-19 feet.

Pampa Pool

In the Pampa Pool, the Phillips Petroleum Co.'s No. 1 H. M. Davis flowed 200 bbls. the second 24 hours from 2 feet in granite wash topped at 3,050 feet. This is in Section 86. Pure Oil Co.'s No. 1 Davis, in Section 86, was flowing 30 bbls. an hour at 3,139-45 feet.

One of the best wells of recent weeks in the Pampa Pool was Gulf Production Co.'s No. 2 Worley & Reynolds, in the NE cor. of Section 83. It flowed 925 bbls. the first 24 hours and 1,160 bbls. the second day, Friday, at 2,881 feet in granite wash. Same company's No. 1 Merten pumped 160 bbls. in 22 hours at 3,250 feet.

An interesting event of the week was the opening up of Murchison & Fain's No. 1 Brinkley & Cain in Wheeler County, Section 55, Block 24. Total depth is 2,442 feet and the well flowed 200 bbls. the first 24 hours after opening. It may be deepened.

Hutchinson County

In Hutchinson County, Sinclair Oil & Gas Co.'s No. 1 Williams, Section 43, Block 47, elevation 3,011 feet, was drilling at 3,006 feet Monday with no increase in oil. This was looked upon last week as a promising hope of extension to the northwest near the Moore County line, but like the Cadman well just across the line in Moore County, has proved disappointing. It is probable that some of the showings in the Sinclair well will be shot if nothing develops while deepening.

In Carson County, Marland Oil Co.'s No. 6 Burnett-A, Section 116, Block B-5, flowed 200 bbls. at 3,171-77 feet. Gulf Production Co.'s No. 19 Burnett was completed as a gasser good for 8,000,000 feet at 3,088 feet; No. 20 Burnett flowed 157 bbls. Saturday at 3,145-46 feet.

Announcement of two new wildcat tests attracted some attention. These were by the Prairie Oil & Gas Co. for a test in Oldham County and by the Marland Oil Co. in Dallam County. The Prairie test is No. 1 Landergen, 330 feet from the south line and 320 feet from the east line of NE SW, Section 46. The Marland test is No. 1 Capitol Syndicate.

Summary of Drilling Wells in the Texas Panhandle, November 6, 1926

County	First Reports	Wells Drilling	Shut Down
Armstrong	0	2	0
Carson	5	15	4
Castro	0	2	0
Childress	0	1	0
Collingsworth	1	3	1
Crosby	0	0	0
Dallam	0	2	1
Deaf Smith	0	2	0
Donley	0	1	0
Gray	1	81	7
Hall	0	1	0
Hansford	0	2	1
Hartley	0	8	2
Hemphill	0	4	2
Hockley	0	1	0
Hutchinson	12	308	36
Lamb	0	0	1
Lipscomb	0	1	2
Moore	0	110	3
Ochiltree	0	2	3
Oldham	1	0	0
Parmer	0	1	0
Potter	0	5	0
Randall	0	1	0
Roberts	0	7	1
Sherman	0	1	2
Wheeler	0	20	4
Totals	21	512	76

PANHANDLE COMPLETIONS

Hutchinson County

Empire Gas & Fuel Co.'s No. 3 Johnson-A, Section 68, Block 46, was shot with 80 quarts at 2,869-2,900 feet and made 250 bbls.; No. 4-A made 300 bbls. after a 60-quart shot at 2,820-45 feet; No. 3 Johnson-B, in Section 21, Block Y, was good for 96 bbls. following a shot of 180 quarts at 2,901-73 feet.

Marland Oil Co.'s No. 5 Johnson-A, in Section 20, Block Y, was plugged from 2,963 feet to 2,950 feet and shot with 40 quarts at 2,925-45 feet. It made 175 bbls., 50 per cent of which was water. Same company's No. 8 Johnson-A, in the same section, flowed 1,200 bbls. following a 40-quart shot placed at 2,945-59 feet, total depth 2,960 feet; No. 3 Weatherly-B, in Section 19, Block Y, made 100 bbls. at 3,010-44 feet.

McIlroy & Herring's No. 6 Smith, in Section 5, Block Y, was a 100-bbl. producer at 2,690-2,753 feet. Phillips Petroleum Co.'s No. 1 J. A. Whittenburg was completed as a gasser at 2,880 feet, good for 15,000,000 feet of gas. Same company's No. 1 J. A. Whittenburg-Byron in the Mary Whitley Survey was rigging up company tools and flowing 100 bbls. daily at 2,877 feet. Phillips Petroleum Co. and Coble Oil Co.'s No. 10 J. A. Whittenburg in Section 12, Block Y, was completed as a gasser at 2,650 feet good for 25,000,000 feet of gas.

Prairie Oil & Gas Co.'s No. 20 Johnson-A in Section 64, Block 46, made 115 bbls. at 2,890-2,943 feet; No. 25 Johnson-A in Section 21, Block Y, produced 1,200 bbls. initially at 2,957-88 feet.

Swindler & Son's No. 1 E. Cockrell in Section 8, Block B-3, was shut down and flowing 15 bbls. daily from pay at 2,982-96 feet. This well had its first show at 2,871 feet.

North of the Canadian River, Amerada Petroleum Corp.'s No. 3 G. A. Whittenburg in Section 20, Block 47, was swabbing 70 bbls. at 3,018-28 feet and will be shot. Phillips Petroleum Co.'s No. 4 J. J. Perkins-Martin in Section 1, Block X02, had pay at 2,926-45 feet and after a 120-quart shot at 2,847-2,945 feet sprayed 240 bbls.

Carson County

Gulf Production Co.'s No. 20 Burnett in Section 116, Block 5, flowed 150 bbls. in 24 hours at 3,146 feet. Marland Oil Co.'s No. 3 Burnett-C, Section 105, Block 5, was plugged back from 3,117 feet to 3,060 feet and completed as a 15,000,00-foot gasser.

Gray County

Cranfill Brothers were plugging their No. 1 Noble in Section 10, Block A-6, at total depth of 3,200 feet to abandon it. Empire Gas & Fuel Co.'s No. 1 P. A. Worley in Section 63, Block 3, which was completed a few weeks ago for 50 bbls. after a 200-quart shot at 2,960-3,047 feet, was drilling deeper this week. Humble Oil & Refining Co.'s No. 1 Merten, Section 87, Block 3, was shot with 300 quarts at 2,985-3,195 feet and bridged; No. 4 Merten flowed 115 bbls. following a 200-quart shot at 3,123-75 feet. Magnolia Petroleum Co.'s No. 8 Merten, Section 82, Block 3, flowed and swabbed 100 bbls. in 8 hours after it was shot with 280 quarts at 2,940-3,006 feet. McMann Oil & Gas Co.'s No. 2 Worley & Reynolds, Section 83, flowed 200 bbls. at 3,026-59 feet, total depth 3,064 feet; No. 3 was shut down for orders at 2,436 feet; No. 4 was shot with 150 quarts at 3,057-3,124 feet after which it swabbed and flowed 40 bbls. This well had its first showing at 3,032 feet. It had 6,000,000 feet of gas at 2,860-65 feet, and total depth is 3,128 feet.

Wilcox-Pampa Oil & Gas Co.'s No. 5 Worley & Reynolds in Section 62, flowed 600 bbls. from granite wash at 2,888-2,929 feet; No. 7 flowed 300 bbls at 2,955-87 feet; No. 8 sprayed a little oil after a 160-quart shot at 2,964-3,005 feet, total depth 3,082 feet, and was shut down for orders; No. 11 had a show in sandy lime at 3,170-80 feet, but was plugging to abandon at 3,225 feet.

Gulf Production Co.'s No. 2 Worley in the NE cor. SE of Section 83 flowed 925 bbls. November 4 and 1,160 bbls. the next day at total depth of 2,881 feet.

Wheeler County

Upham Gas Co.'s No. 1 Martin in Section 89, Block 17, had granite wash at 1,950-2,030 feet, but no show of oil. It was completed for 10,000,000 feet of gas at 1,865-77 feet. Murchison & Fain's No. 1 Binkley & Cain which had granite wash at 2,437-42 feet, was opened up and flowed 200 bbls. the first 24 hours. This is in Section 55, Block 24.

Sherman County

Eclipse Drilling Co. abandoned the rig for No. 1 Lee Bivins, Section 35, Block 2.

Hemphill County

McCockrell and others abandoned the location for No. 1 Schaller Estate in the J. Fanning Survey.

NEW LOCATIONS

Armstrong County

United Oil & Trust Co.'s No. 1 J. P. Reck, 330 feet north and west SE cor. NW, Section 162, Block 4, H. & G. N. Survey.

Carson County

Champlin Refining Co.'s No. 2 E. F. Bryan, 330 feet north and 275 feet west SE cor. each 50 acres of the N half NW section 92, Block 4, I. & G. N. Survey. Marland Oil Co.'s No. 1 Burnett Estate-I, 330 feet south and west NE cor. Section 102, Block 4, I. & G. N. Survey. Skelly Oil Co.'s No. 1 E. F. Bryan, 330 feet south and west NE cor. SW, Section 92, Block 4, I. & G. N. Survey. The

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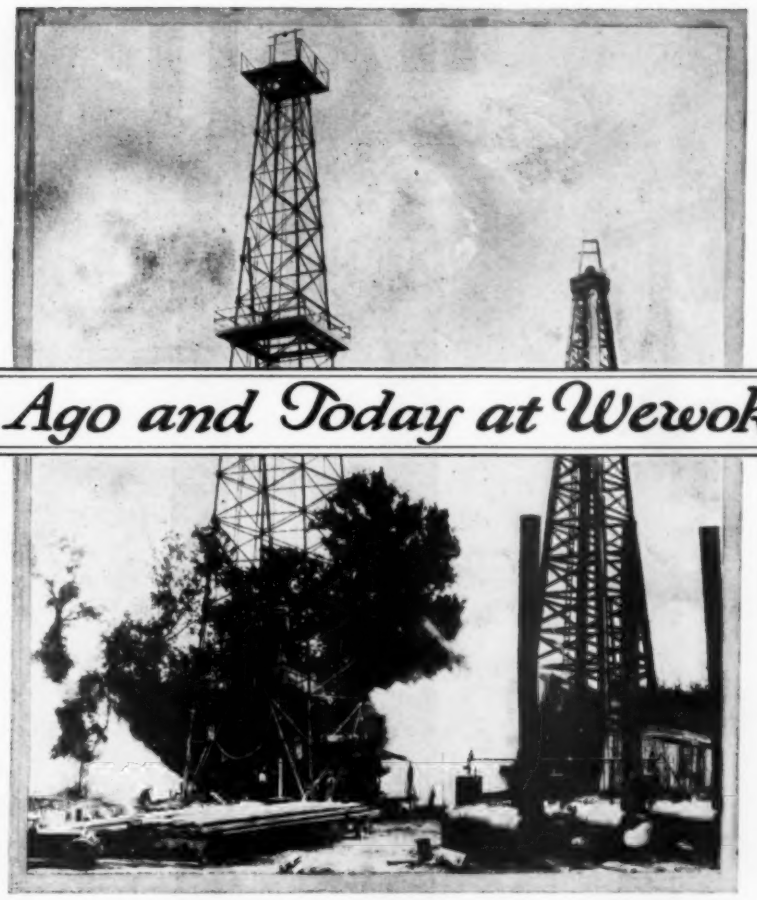
WILDCAT OPERATIONS IN PANHANDLE

Week Ending November 6, 1926

Company, Well, Farm Name, Section and Block—	Remarks—
ARMSTRONG COUNTY	
Red Hill Corp.'s No. 1 Puckett Bros., Section 3, Hooper & Wade Sur.	Drilling, 3,495 ft.
United Oil & Trust Co.'s No. 1 J. P. Reck, Sec. 162, Blk. 4, H. & G. N. Survey	Location.
BRISCOE COUNTY	
Smith & Baker's No. 1 J. W. Owens, Sec. 11, Blk. GC2	Location.
CARSON COUNTY	
Amatex Oil Co.'s No. 1 E. S. Polling, Sec. 22, Blk. 2-Y	Shut down 1,980 ft.
Champlin Ref. Co.'s No. 1 E. F. Bryan, Sec. 92, Blk. 4	Rigging up.
Champlin Ref. Co.'s No. 2 E. F. Bryan, Sec. 92, Blk. 4	New loc., building rig.
Empire G. & F. Co.'s No. 1 M. P. Co. fee, Sec. 91, Blk. 4	Spudding.
Humble O. & R. Co.'s No. 1 Burnett Acct. 3, Sec. 137, Blk. 5	Show gas, 2,320 ft., dring., 2,525 ft.
Humble O. & R. Co.'s No. 1 Burnett, Acct. 4, Sec. 12, Blk. 4	Drilling, 2,575 ft.
F. Kappenberger's No. 1 E. F. Bryan, Sec. 107, Blk. 4	New loc., building rig.
M. & M. Drilling Co.'s No. 1 C. F. Moore, C NE. Sec. 10, Blk. 5	New location.
Magnolia Pet. Co.'s No. 1 fee, No. 244, Sec. 91, Blk. 4	Building rig.
Marland Oil Co.'s No. 1 E. F. Bryan, Sec. 92, Blk. 4	Drilling, 1,200 ft.
Marland Oil Co.'s No. 2 E. F. Bryan, Sec. 92, Blk. 4	S.D., 580 ft. for gas.
Marland Oil Co.'s No. 1 Burnett-E, Sec. 117, Blk. 4	Drilling out cement, 2,250 ft.
Marland Oil Co.'s No. 1 Burnett-F, Sec. 117, Blk. 5	Pull. 20-in. cas., 803 ft.
Marland Oil Co.'s No. 1 Burnett-G, Sec. 126, Blk. 5	Drilling, 925 ft.
Marland Oil Co.'s No. 1 Burnett-I, Sec. 102, Blk. 4	Rig.
McMan O. & G. Co.'s No. 1 E. F. Bryan, Sec. 107, Blk. 4	Drilling, 950 ft.
McMan O. & G. Co.'s No. 2 E. F. Bryan, Sec. 107, Blk. 4	Location.
McMan O. & G. Co.'s No. 3 E. F. Bryan, Sec. 107, Blk. 4	Rigging up.
McMan O. & G. Co.'s No. 4 E. F. Bryan, Sec. 107, Blk. 4	Location.
Mound Valley Oil Corp.'s No. 1 G. W. Witter, Sec. 3, Blk. 7	Set 6-in., 2,805 ft., S.D.
Navajo Oil Co.'s No. 1 E. S. Polling, Sec. 22, Blk. 2-Y	Drill pipe stuck, 1,750 ft., fishing.
Nunn & McAuley's No. 1 E. F. Bryan, Sec. 107, Blk. 4	S.D., 2,150 ft. for gas.
J. C. Park's No. 1 J. L. Noel, Sec. 198, Blk. 3	Drilling, 1,720 ft.
Prairie O. & G. Co.'s No. 1 Deahl, Sec. 5, Blk. 5	Drilling, 2,660 ft.
Prairie O. & G. Co.'s No. 1 J. W. McConnell, Sec. 67, Blk. 4	Rig.
Roxana Pet. Corp.'s No. 2 E. F. Bryan-A, Sec. 92, Blk. 4	Drilling, 550 ft.
Roxana Pet. Corp.'s No. 3 E. F. Bryan-A, Sec. 92, Blk. 4	Drilling, 350 ft.
Roxana Pet. Corp.'s No. 1 E. F. Bryan-B, Sec. 107, Blk. 4	Drilling, 2,240 ft.
Roxana Pet. Corp.'s No. 1 E. F. Bryan-C, Sec. 107, Blk. 4	Rigged up and shut down for gas.
Roxana Pet. Corp.'s No. 1 E. F. Bryan-D, Sec. 92, Blk. 4	Rigging up.
Skelly Oil Co.'s No. 1 E. F. Bryan, Sec. 92, Blk. 4	Rigging up.
Southwestern O. & D. Co.'s No. 1 C. R. Garner	Rig.
The Texas Company's No. 1 M. P. Co. fee, Sec. 91, Blk. 4	Drilling, 240 ft.
The Texas Company's No. 2 M. P. Co. fee, Sec. 91, Blk. 4	Drilling, 350 ft.
The Texas Company's No. 1 C. A. Noel, Sec. 26, Blk. 4	Location.
The Texas Company's No. 3 J. L. Noel, Sec. 187, Blk. 3	Rig.
White Deer Oil Co.'s No. 1 Jordan-Brown, Sec. 114, Blk. 4	Small show oil 3,117 ft., 700 ft. water 3,130-40 ft., T.D., 3,160 ft., plugged back to 3,105 ft., S.D.
White Deer Oil Co.'s No. 2 Jordan-Brown, Sec. 104, Blk. 4	Rigging up.
CHILDRESS COUNTY	
Gibson Oil Corp. et al's No. 1 Smith, J. Gregg	Fishing bit, 2,660 ft.
C. L. Sloane and others' No. 1 B. F. Smith, Survey 49, F. F. Knott Lands	Rig complete.
COLLINGSWORTH COUNTY	
Allmon and others' No. 1 McDowell, Sec. 107, Blk. 22	Running 10-in., 1,650 ft.
Duke & Langford's No. 1 Martha Johnson, Sec. 97, Blk. 22	Location.
Harmon & Deems' No. 1 Wilson (Scott), Sec. 44, Blk. 21	Rig on ground.
Martin and others No. 1 T. V. Norwood, Sec. 30, Blk. 18	Spudded and shut down.

(Continued on Page 150)

Magnolia Petroleum Co. derricks at Wewoka, Okla.



Three Years Ago and Today at Wewoka

Deeper and Deeper!

"THREE years ago, a well was drilled at Wewoka, Okla. with a wood rig. It was a dry hole. Today, within a few feet of it, is a giant Moore Rotary Driller, with which the owners will drill another hole, a much deeper one—in a second attempt to strike oil." (See photo).

This simple statement is typical of what has been going on in the oil business for the past five or ten years. "Deeper and deeper" has become the battle cry of the drilling industry.

With old fields fast nearing exhaustion and new ones becoming more difficult to find, going deeper is the solution offered. And this usually means drilling with a Moore—the safest, strongest, most dependable derrick developed for deep, hazardous drilling; for conquering every difficulty which calls for giant strength and endurance.

The Smackover re-birth was a result of drilling deeper; and with its sensational history has become inseparably linked inspiring tales of Moore derrick performance.

MOORE TUBULAR STEEL DERRICKS

LEE C. MOORE & COMPANY
Established 1907
Pittsburgh, Penna. Tulsa, Oklahoma

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"OILWELL" manufactures many types of Drilling and Fishing Tools, a few of which are shown in the accompanying illustrations.

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TOOLS

"OILWELL" Tools—built on years of experience and renowned for their strength, durability and workmanship.

A. P. I. Taper Joints—all "OILWELL" Tools have joints adopted by the American Petroleum Institute in 1924. This is practically the old I. and H. Joint used by "OILWELL" for years. Special joints, other than A. P. I., can also be supplied to order.

"OILWELL" Steel—years of careful experiment with various chemical specifications including many alloys have resulted in "OILWELL" Steel, a steel which is unsurpassed by any other. Repeat orders are a proof that "OILWELL" Tools are more easily handled and give better service in the field.

SUPPLY CO.

World's Largest Manufacturers of Oil Field Equipment

"OILWELL" ESTD. 1862. TRADE MARK. (REGISTERED)

Big Producer 9 Miles from Seminole

Gypsy Oil Co. Completes Well Making 125 Bbls. Hourly, Adding to Excitement of That Area. Proration Effective

By J. L. Dwyer
Staff Correspondent, Oklahoma Fields

Supplementing the great Seminole Field in Seminole County, a wildcat well of the Gypsy Oil Co., 9 miles west of the producing limits of the Seminole Pool, caused added excitement early this week. The new well, No. 1 School Land, NE cor. NW NE Section 16-9-5, has been producing 270 bbls. daily from what is now thought to be a lime above the Wilcox sand. The top of the Wilcox is now believed to be 4,272 feet, and the sand was penetrated a depth of 9 feet, making the total depth of the well 4,281 feet. Owing to the limited tankage, an accurate gauge of the well is difficult to obtain, and its production is variously rated from 125 to 140 bbls. an hour. This find will cause much interest in the region, and there has been a considerable amount of speculation as to whether the new territory will be handled as a part of the Seminole Pool and subjected to the jurisdiction of the umpire who is now handling Seminole runs and production.

Regardless of whether or not it is included in Seminole, it is evident that congested conditions will cause a note of caution to be introduced in inaugurating a drilling campaign in Township 9-5. The offset wells must necessarily be drilled, owing to the clauses in the leases which provide for this, but it is dubious if any great drilling activity will be witnessed in 9-5 at the present time. The operating companies have had sufficient grief at Seminole, and, while practically no oil was lost, the fact that temporary earthen storage was necessary has demonstrated the advisability of a careful and prudent drilling campaign in the new field.

Getting Order at Seminole

After a few days of officiating, Ray Collins, the umpire appointed to handle the Seminole operators' problems, is bringing order out of the chaos which prevailed in that field. All the oil gaugers of the various pipeline companies now report directly to the umpire, and he apportions the runs which shall be made from all leases. The majority of wells in the field have been pinched in, and the production has been lowered some 14,000 bbls. daily. It is now about equal to the pipeline capacity of the field. During the past two days, only 700 bbls. of oil have been placed on the ground, and by Wednesday of this week it is doubtful if any oil will remain in the earthen tanks.

North Braman Holding Up

The North Braman Field in Kay County is holding its Wilcox production very well. The Comar Oil Co. holds the dominant position in this field, and its wells have maintained a good rate of flow. No. 1 Pribboth, NE cor. NW, Section 21-29-1w, is making 5,281 bbls., and No. 8 Pribboth, SE cor. NE NW, Section 21-29-1w, is making 5,809 bbls. No. 5 Buell, SW cor. NW NW NE, Section 21-29-1w, is making 3,888 bbls., and No. 6-W Buell, SW cor. NW NE, Section 21-29-1w, is making 4,693 bbls.

The south country, as Seminole and Pottawatomie Counties are called, is coming into a big play. The finding of oil to the southwest of the Seminole Pool has resulted in a campaign of acreage buying which has not been previously observed.

Remarkably high prices have been paid for leases which are as far as 10 miles from production. One of the wildcat wells which has caused this is the Tidal-Osage Oil Co.'s No. 1 Kenyon, SW cor. SE SE Section 3-8-4. This well has touched a formation which is either the Wilcox sand or Hunton lime, and has made one flow. It is standing with a hole full of oil from this formation, which was topped at 4,128 feet, and penetrated three feet. If it is the Hunton lime, it is thought that the formation is running very low, but if it should prove to be the Wilcox sand, it is thought to be very high. Sand samples of this well have not reached Tulsa, and until such time as a good sample can be obtained, the identity of the strata is in doubt. Should this well also prove to be producing from the Wilcox sand, it will mean the opening of another pool, and will result in additional excitement for the area. Soon after the oil was found in the 3-8-4 well, leases to the north were sold at an unusually high figure. The top price was probably paid by the Amerada Petroleum Corp., which purchased a lease from A. D. Adcock of Okmulgee for $250 an acre. The lease was 1½ miles north of the well.

Geological Conclusions

The opinion has been voiced that the reason for the good production being found in the Seminole section is that the Arbuckle Mountains go under the surface just south of the Seminole Field, and that the foldings created by a meeting of the rocks of the Arbuckle, and the rocks of the country to the north of Seminole has resulted in a basin forming which caught and held the oil. The theoretical line of this basin runs southwest of Seminole over into Pottawatomie and Garvin Counties, and the theory has resulted in a spirited interest in the leases of these counties, which must now be classified as the wildest of the wild. The finding of oil in 9-5 and 8-4 gives strength to the theory.

In the Earlsboro region, the Magnolia Petroleum Co.'s No. 1 Sparks, NW cor. SW Section 11-9-5, has been agitated and is producing 1,103 bbls.

On Sunday of this week, the Seminole field produced 106,268 bbls., and out of this amount the 30 Wilcox sand wells made 98,111, divided as follows:

	Bbls.
Amerada-Gardner No. 1 Killingsworth	2,790
Barnsdall Oil Co., No. 2 Carter	1,672
Carter Oil Co., No. 1 Carter	915
Gypsy Oil Co., No. 1 Carter	975
Gypsy Oil Co., No. 1 Fixico	2,957
Gypsy Oil Co., No. 1 Wolfe	7,400
Independent-Garland, Nos. 1, 2, 3 and 4 Fixico	11,559
Independent-Inter-Ocean No. 1 Jones	4,476
Indian Terr. Illu. Oil Co. No. 1 Bowlegs	2,868
Indian Terr. Illu. Oil Co. No. 3 Bowlegs	7,565
Indian Terr. Illu. Oil Co. No. 1 Reed	80
Indian Terr. Illu. Oil Co. No. 2 Reed	Off
Indian Terr. Illu. Oil Co. No. 8 James	3,374
Mid-Cont. Pet. Corp. No. 1 Fixico	4,175
Pure Oil Co. No. 1 Strothers	4,770
Pure Oil Co. No. 2 Strothers	1,967
Pure Oil Co. No. 4 Strothers	2,528
Pure Oil Co. No. 5 Strothers	2,500
Searight et al No. 3 Grayson	4,338
Sinclair O. & G. Co. No. 1 Cudjo "A"	5,795
Sinclair O. & G. Co. No. 1 Cudjo "B"	6,845
Superior Oil Co. No. 1 Cudjo	6,772
Tidal-Osage Oil Co. 2 wells on Fixico lease	4,900
Tidal-Osage Oil Co. 2 wells on Mahardy lease	6,890
Total Wilcox production	98,111
Hunton lime production	8,157
Grand total	106,268

In the Seminole Field, the following wells have been shut down on top of the sand in accordance with the operators' agreement: Gypsy Oil Co.'s No. 2 Carter, SW cor. NE NW Section 24-9-6, at 4,133 feet; Gypsy Oil Co.'s No. 2 Wolfe, NE cor. SW NW Section 26-9-6, at 4,246 feet; Pure Oil Co.'s No. 2 Strothers, SE cor. NE SW Section 26-9-6, at 4,050 feet; No. 6 Strothers, SE cor. SW Section 26-9-6, at 3,984 feet. These wells will not be drilled in until the expiration of the agreement (November 25), unless pipeline conditions are improved to the extent that they may be completed without fear of waste.

In the Wewoka Field, W. R. Ramsey has a good well in No. 7 Salinda, SW cor. NW SE Section 31-8-8. This well found the deep sand 3,992-4,047 feet, and made 355 bbls. It is an inside location and will not result in any additional drilling.

Wilcox Sand at Cromwell

The Cromwell Field, over two years old, sprang to life during the past week when the Continental Oil Co.'s No. 4 Pierce, NW cor. SW SE, Section 33-11-8, was drilled to the Wilcox sand, and started flowing at the rate of 500 bbls. daily. The sand was found at 4,073-4,132 feet, and the well is slightly increasing its flow, and is now making 535 bbls. daily. In the opinion of many who have studied the field, it is thought that the well being drilled 59 feet into the sand indicates that huge production in the Wilcox may not be expected in this operation, but on the other hand, the fact that this amount of Wilcox has been found is significant, as the Wilcox sand is very eccentric, and may yield big wells at Cromwell.

As far as starting any new developments in the Cromwell Field, it is unlikely that any wells will be started from the grass roots, but some of the old wells which have been producing from the regular 3,400-foot level may be deepened to the Wilcox. If the holes are in shape to permit deepening, and their production from the 3,400-foot horizon is limited, it would be advantageous to drill the wells deeper.

Seminole County

Magnolia Petroleum Co.'s No. 1, SE cor. NW NE SE, Section 27-8-8, is making 13,000,000 feet of dry gas at 3,221 feet. It topped sand at 3,208 feet and made the first gas at 3,214 feet. The well has not been completed. Mid-Continent Petroleum Corp. has made a location for No. 1 Salochee, NE cor. SE SW, Section 33-10-6. Prairie Oil & Gas Co. has built the rig for No. 3 Stewart, NW cor. SW NW, Section 34-10-6. The Carter Oil Co. has dug the cellar for No. 1 Washburn, SW cor. NW NW, Section 34-10-6, Continental Oil Co. is drilling at 1,000 feet in No. 11 Pierce, CEL SW SE, Section 33-11-8. Barnsdall Oil Co. has made a location for No. 1 Johnson, NE cor. SE SE, Section 10-9-5. The rig is up for No. 1 Davis, SW cor. NW, Section 11-9-5. The location is made for No. 2 Davis, SE cor. SW NW, Section 11-9-5. Carter Oil Co. has built the rig for No. 2 Deer, SW cor. NW NW., Section 3-9-6. W. B. Pine has made a location for No. 1 Lula, NE cor. SW, Section 4-9-6. Carter Oil Co. has built the rig for No. 2 Davis, NW cor. NE NE, Section 4-9-6. Mid-Continent Pet. Corp. has made a location for No. 12 Rentie, NE cor. NW SE, Section 14-9-6. Roxana Petroleum Corp. has built the rig for No. 1 Johnson, SE cor. SW SE, Section 22-9-6. The rig is on the ground for No. 1 Lasely, NE cor. SE NE, Section 22-9-6.

Prairie Oil & Gas Co. has built the rig for No. 2 Lewis, SW cor. SE SE, Section 27-9-6. The rig is built for No. 5 Lewis, SW cor. NE SE, Section 27-9-6. Phillips Petroleum Co. has built the rig for No. 1 Strothers, SE cor. SW SE, Section 27-9-6. Barnsdall Oil Co. has a rig on the ground for No. 1 Jones, NW cor. NE NE, Section 34-9-6. The rig is on the ground for No. 3 Jones, SE cor. NE NE, Section 34-9-6. Carter Oil Co. is rigging up to drill an old well deeper

ANNUAL TAXES LEVIED ON MOTORISTS NEARING HALF COST OF GOVERNMENT

Taxation of the privilege of motor car driving has come to be one of the most important sources of public revenue in this country. An estimate from figures of the United States Bureau of Public Roads finds that about $1,224,000,000 will be collected for 1926 in taxes on gasoline, motor car licenses and fees, internal revenue tax on cars, parts and accessories, and property taxes on motor cars, motor car manufactures, and the oil industry.

Of all these items, the tax on gasoline increases most rapidly year by year. The bureau estimates that it will reach $211,000,000 in 1926, and it will probably go a long way past $250,000,000 in 1927.

Further, the total figure for such taxes promises in 1927 to reach around $1,500,000,000. The United States Government Budget Bureau for 1927 estimates Government expenditures at $3,494,000,000; showing that this special group of taxes is rapidly mounting toward the production of a revenue equal to half of the national Government's cost, including interest on the public debt.

Federal income tax collections, 1926, are estimated at $1,685,000,000; that is, motor cars and motor fuel are in sight of the time when they will bring in as much revenue as income taxes.

In view of the enormous importance which these figures show attaches to this limited group of special levies, it is a striking fact that the whole system of motor and motor fuel taxation has grown up within a few years, almost without direction or supervision, and that in consequence of this haphazard development there is an utter lack of uniformity in rates, methods, and regulations. The income tax laws have been developed and administered with the utmost care and consideration for all interests concerned. They have been analyzed by statisticians, studied by economists, formulated with meticulous care by publicists and experts after exhaustive investigations;—whereas the structure of motor and motor fuel taxation, like Topsy, has "just growed."

Coming State Conference

Recognizing the increasing importance and the chaotic conditions in this department of the nation's revenue producing establishment, state officials charged with administering the motor fuel tax laws have arranged for a national conference at St. Louis, Mo., November 11, 12, and 13. Many subjects of the first significance will be discussed. It is now assured that practically all the states will be represented, for the motor fuel tax is a state affair. All the states except four—New York, New Jersey, Massachusetts and Illinois being the exception. In 44 states and the District of Columbia gasoline taxes are levied but they range all the way from 1 to 5 cents per gallon, and the methods of collection and regulation are as numerous as are the states. There is a wide variety of exemptions; in some states gasoline for farm tractors is exempted; in others all gasoline except that used by highway vehicles is exempted; in some, there are no exemptions at all.

The general rule is that revenues from

(Continued on Page 134)

in No. 1 Strothers, NE cor. SE, Section 34-9-6. Old total depth is 3,005 feet. Independent Oil & Gas Co. and Atlantic Oil Producing Co. have a rig on the ground for No. 1-A Cudjo, NW cor. SE, Section 35-9-6. Atlantic Oil Producing Co. has the rig built for No. 2 Cudjo, NE cor. SW, Section 35-9-6. McCulloch Oil Co. and the Philmack Oil Co. have a rig on the ground for No. 1 Butler, NW cor. SE NE, Section 35-9-6. T. B. Slick has built a rig for No. 2 Butler, SW cor. NW NE, Section 35-9-6. The rig is built for No. 3 Butler, NW cor. SW NE, Section 35-9-6. The rig is on the ground for No. 4 Butler, SW cor. NE, Section 35-9-6.

T. B. Slick also has a rig on the ground for No. 5 Butler, NE cor. NW NE, Section 35-9-6, and for No. 6 Butler, SE cor. NW NE, Section 35-9-6. The cellar is dug for No. 7 Butler, NE cor. SW NE, Section 35-9-6. A location is made for No. 8 Butler, SE cor. SW NE, Section 35-9-6. Sinclair Oil & Gas Co. is building a rig for No. 3 Cudjo, SW cor. NW NW, Section 35-9-6. Carter Oil Co. is rigging up to drill an old gas well deeper in No. 1 Cudjo, NW cor. SW, Section 35-9-6. The rig is up for No. 2 Cudjo, NE cor. NW SW, Section 35-9-6. Turman Oil Co. has a rig on the ground for No 1 Grisso, NE cor. SW NW, Section 35-9-6. A location is made for No. 2 Cudjo, SE cor. SW NW, Section 35-9-6. No. 3 Cudjo, NW cor. SW NW, Section 35-9-6, is also a location. Mid-Kansas Oil & Gas Co. has made a location for No. 1 Cully, NW cor. SE NE, Section 3-8-6. Carter Oil Co. has a rig up for No. 1 Bowlegs, NE cor. SW SE, Section 15-8-6. Magnolia Petroleum Co. has spudded No. 3, SE cor. SE SW, Section 14-8-7.

Pottawatomie County

Amerada Petroleum Corp. and the McCulloch Oil Co. have made a location for No. 1 Osborne, NW cor. NW, Section 2-9-2.

Okmulgee County

Diamond Oil Co.'s No. 1, SW cor. NE NW NW, Section 27-13-11, has topped sand at 2,515-26 feet and is making 400 bbls. naturally. It will be drilled deeper. Iron Mountain Oil Co.'s No. 2 Grayson, NW cor. NE NW, Section 3-15-11, is rigging up to drill deeper. Old total depth is 2,193 feet. Getzandaner and others' No. 5 Getzandaner, C NW SW, Section 29-15-11, is a rig and tools. J. M. Kessler has spudded No. 1 Roberts, NW cor. SW NE, Section 7-14-13. McDowell and others have rigged up a machine for No. 2 Lovett, NW cor. SE SW, Section 14-14-13. J. A. Swindler has the rig up for No. 1 Mason, SE cor. NE, Section 24-13-11. Barclay Morgan and others have a machine on the ground for No. 7 Kanard, SW cor. SE NE, Section 13-11-13.

Creek County

Silurian Oil Co.'s No. 22, CWL SW, Section 8-18-7, sand at 2,362-77 feet, made 70 bbls. naturally. G. M. Oil Co.'s No. 1, NW cor. SE, Section 14-17-9, has been abandoned as dry at 3,287 feet. Independent Oil & Gas Co.'s No. 1, SW cor. SE SW, Section 5-17-10, sand at 2,983-3,014 feet, shot with 20 quarts, made 385 bbls. Mid-Continent Petroleum Corp.'s No. 27, NW cor. SW SE, Section 15-17-7, sand at 2,906-08 feet and total depth at 2,926 feet, shot with 40 quarts, made 32 bbls. C. G. Tibbens has abandoned and plugged No. 1, NW cor. NW, Section 8-14-9.

Pioneer Petroleum Co.'s No. 4 Morgan, C SW NE, Section 15-19-9, is rigging up. Gordon and others have spudded No. 1 Cobb, SW cor. NE, Section 16-19-10. Wilson and others are drilling at 500 feet in No. 1-A Jacobs, C NW NE, Section 26-18-10. Roxana Petroleum Corp. is rigging up No. 4 Bruce, NE cor. SW NE, Section 10-17-9. A. D. Pugh has made a location for No. 1 Milton, SE cor. SW NW, Section 7-17-10. J. H. Wright has a rig on the ground for No. 14 Tah Kah Fay, CNL NE NW, Section 24-17-10. H. C. Wilson has built the rig for No. 1 Sheeter, SW cor. SW, Section 29-17-10. C. G. Tibbens is rigging up No. 3 Herrod, CNL NE SW, Section 25-15-8. The rig is on the ground for No. 34 Connetsenny, NW cor. SE, Section 30-15-19. Mid-Continent Petroleum Corp. has built the rig for No. 1 Washington, SE cor. SW, Section 4-14-10.

Burlingame & Sharp's No. 11, SE cor. SW NW, Section 13-19-8, had sand at 2,878-2,890 feet and made 20 bbls. It will be shot. Devonian Oil Co.'s No. 5, NE cor. SW NE, Section 14-19-8, is dry and abandoned at 2,963 feet. Register Oil Co.'s No. 2, CSL SE NW, Section 17-19-10, is making 2,000,000 feet of gas from sand at 2,207-2,218 feet. Bu-Vi-Bar Petroleum Co.'s No. 1, SE cor. SW NW, Section 11-17-8, hand sand at 2,612-2,620 feet with 2,000,000 feet of gas. Shaffer Oil & Refining Co.'s No. 1, SW cor. SW, Section 16-17-8, had sand at 3,468-3,510 feet and made 540 bbls. after being shot with 15 and with 40 quarts. T. B. Slick's No. 1, SE cor. SW NW, Section 23-16-8, is dry and abandoned at 3,120 feet. Olean Petroleum Co.'s No. 1, NE cor. NE, Section 36-15-7, had sand at 3,230-31 feet with 80,000,000 feet of gas. H. F. Wilcox Oil & Gas Co.'s No. 8, NW cor. SE NW, Section 2-15-8, had sand at 3,623-39 feet, and made 125 bbls. after a shot of 60 quarts. T. B. Slick's No. 1, NW cor. SW SE, Section 32-14-10, had sand at 3,400-13 feet, and made 260 bbls. after a shot of 80 quarts.

W. J. Sherry's No. 1, SW cor. SE NE, Section 5-18-10, had a showing of oil in sand at 2,090-2,115 feet. It made 250,000 feet of gas in sand at 2,070-90 feet. It had not been completed. G. M. Oil Co.'s No. 1 Bell, SE cor. SE NE, Section 6-18-10, is rigging up. Bu-Vi-Bar Oil Co. is drilling at 250 feet in its No. 1, SW cor. NE NW, Section 9-18-10. The same company has 2,000,000 feet of gas in its No. 1, SE cor. SW NW, Section 11-17-8. Sand was found at 3,612-20 feet. The well is not complete. The Texas Company will shoot its No. 5, SW cor. NW SE, Section 3-17-9. It made 50 bbls. in sand at 2,065-85 feet and 2,085-2,103 feet. Wilcox Oil & Gas Co. is drilling at 500 feet in No. 4, NW cor. SE NE, Section 10-17-9. Arnold's No. 1, SW cor. SE NW, Section 2-17-10, made 100 bbls. in sand at 1,993-2,045 feet and will shoot. Papoose Oil Co. has a location for No. 1, SE cor. NW, Section 4-17-10. Dixie Oil Co. is building a rig for No. 3 Francis, NE cor. SW SW, Section 5-17-10. Independent Oil & Gas Co. has a rig up for No. 2 Francis, NW cor. SW SE SW, Section 5-17-10. The same company is drilling ahead in No. 2, NE cor. NW, Section 8-17-10, after having 500 feet of oil in the hole at 3,062-68 feet. Gibson Oil Co. is drilling at 500 feet in No. 1, SE cor. SE, Section 13-17-10. J. H. Wright has spudded his No. 13, NE cor. NW, Section 24-17-10. The Texas Company has a rig up for No. 3, CSL SW NE, Section 26-14-8. Phillips Petroleum Co. has a rig on the ground for No. 3 Charles, SE cor. SE, Section 25-15-7. Olean Petroleum Co. has 30,000,000 feet of gas in No. 1, NE cor. NE, Section 36-15-7. C. G. Tibbens is rigging up a machine for No. 4 Lucas, SE cor. NE NW, Section 31-15-9. Gray Oil Co. is drilling at 400 feet in No. 1, NW cor. SW NE, Section 3-14-10. Atlantic Oil Producing Co. is drilling at 630 feet in No. 1, NW cor. SE, Section 16-14-10. Quinlan & Henry's No. 2, SE cor. NE SW, Section 20-14-10, flowed 75 bbls. from 6 feet in sand at 2,805-33 feet. Murphy & Henry's No. 1, NE cor. NW NW, SE, Section 32-14-10, was shut down after spudding. Mid-Continent Petroleum Corp.'s No. 1 Mitchell, SW cor. NE, Section 32-14-10, has a rig building.

Payne County

Sinclair Oil & Gas Co has abandoned at 3,546 feet its No. 12, NE cor. NE NW, Section 13-19-5. Josey Oil Co. has completed No. 5-A, NW cor. SW SW, Section 13-19-5, making 62 bbls. It was shot at 3,474 feet with 10 quarts. Sand was found at 3,460-70 feet. Shaffer Oil & Refining Co.'s No. 2, NW cor. NE SW, Section 23-18-3, is making 30 bbls. naturally from sand at 4,190-4,244 feet. M. T. C. Oil Co.'s No. 3, NW cor. NE NW, Section 26-18-3, is making 600 bbls. naturally from sand at 4,214-4,298 feet. Deep Rock Oil Co.'s No. 1, NE cor. SE NE, Section 27-18-3, had sand at 4,325-28½ feet, and made 300 bbls.

Wilson Gloyd and others are shut down for pipe at 182 feet in No. 1, NE cor. SE NW, Section 32-18-3. Magnolia Petroleum Co. has made a location for No. 3 Walker, NE cor. SW, Section 8-19-5. Twin State Oil Co. has a rig on the ground for No. 1-A, NE cor. NE, Section 22-19-5.

Pawnee County

Mid-Continent Petroleum Corp. and Marland Oil Co.'s No. 22, SW cor. SE NW, Section 16-20-7, sand at 2,578-98 feet, shot with 20 quarts, made 35 bbls. Sinclair Oil & Gas Co.'s No. 11, SW cor. NW NE, Section 10-20-8, sand at 2,383-2,605 feet, made 30 bbls. naturally. Total depth is 3,148 feet. Magnolia Petroleum Co. has a rig on the ground for its No. 3 Fox, NW cor. SE SE, Section 32-20-5.

Magnolia Petroleum Co.'s No. 3, CWL NW SE, Section 9-22-3, is dry and abandoned at 4,205 feet. Mid-Kansas Oil & Gas Co.'s No. 1, SE cor. NW NE, Section 5-23-5, is dry and abandoned at 3,303 feet. This is an old well drilled deeper. Belt and others have a dry hole at 1,695 feet in No. 1, SE cor. SE, Section 29-21-1. Ed Reese and others' No. 1, NW cor. SE, Section 16-21-7, had sand at 2,240-2,262 feet and made 100 bbls. after a shot of 20 quarts.

Continental Oil Co. has dug the cellar for No. 1-B Mankin, SE cor. NE SE, Section 32-20-5. Fern Oil & Gas Co.'s No. 4 Leshaw, C SW NW, Section 22-20-6, is a cellar. Magnolia Petroleum Co. is drilling at 800 feet in No. 4, SW cor. SE NE, Section 32-20-6. Wassen, West and others have spudded No. 1-A Hayden, SE cor. SE, Section 19-21-7. McNamara and others have a rig in for No. 1 Furry, SE cor. NE SE, Section 22-20-8.

Kay County

Marland Oil Co.'s No. 1, NW cor. SW NE, Section 17-25-2, had sand at 1,556-1,562 feet, and made 15 bbls. on the pump. Lynn Wallace has abandoned the location for No. 1, SE cor. SW, Section 18-27-4. Moore Petroleum Co. has abandoned the location for No. 1, SE cor. SW, Section 11-26-1.

Comar Oil Co.'s No. 11-W, NW cor. NE NW, Section 21-29-1w, is making 60 bbls. an hour in sand at 3,389-3,407 feet. It will be drilled deeper. The same company's No. 5-W, NW cor. NE, Section 21-29-1w, is making 2,750 bbls. naturally in sand at 3,380-85 feet. It will be drilled deeper. Skelly Oil Co.'s No. 2, NE cor. SE SW, Section 28-25-1w, sand at 4,300-03 feet, swabbed 20 bbls.

Grady County

Stodgner's No. 8, SW cor. NW NE, Section 23-5-8w, has been completed as a 18,500,000-foot gasser. It found broken sand at 2,108-89 feet. Carter Oil Co.'s No. 1, NE cor. SW NE SE, Section 21-3-5w, sand at 1,524-30 feet, flowing 50 bbls. Briscoe & Hall's No. 2, SW cor. NE NW SW, Section 34-3-5w, has been plugged back to 1,437 feet in sands from 1,433-1,751 feet and is flowing 25 bbls. of oil and lots of water. The same company's No. 3, SE cor. NW NW SE, Section 34-3-5w, had sand at 1,433-34 feet, pumping 50 bbls.

Carter Oil Co. is drilling at 1,143 feet in No. 1, NW cor. SE SE NW, Section 8-3-5w. Gant and Amerada Petroleum Corp. are cementing surface pipe at No. 1, SE cor. NW SW SE, Section 16-3-5w. Marland Oil Co. is rigging up a rotary for No. 2 Burkes, NE cor. SW SW NW, Section 16-3-5w. The same company is rigging up a rotary for No. 1 Burkes, NW cor. SE SE NE, Section 17-3-5w. Clark & Cowden are rigging up a rotary for No. 1 Harrison, NW cor. SE SW NE, Section 21-3-5w. Prairie Oil & Gas Co. has a rig up for No. 1 Howard, NW cor. SE SE NW, Section 21-3-5w. Carter Oil Co.'s No. 1, NE cor. SW SW SW, Section 22-3-5w, sand at 1,387-97 feet, swabbed 40 bbls. the first 24 hours. It has not been completed. Amerada Petroleum Corp. and McCaughey's No. 1 Cochran, NW cor. SE SW NE, Section 27-3-5w, has a rig up. Carter Oil Co.'s No. 4, SE cor. NW SE SW, Section 27-3-5w, sand at 1,318-20 feet, got 13,000,000 feet of gas. It has not been completed. The same company has a location for No. 1 Pounds, NW cor. SE

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WILCOX SAND WELL IN ELK COUNTY FLOWS 315 BARRELS FIRST 24 HOURS

By J. L. Dwyer
Staff Correspondent, Kansas Fields

A well flowing from the Wilcox sand in Elk County, Kansas, was the most interesting news of the week. The Theta Oil Co., which has long studied this region, has the new well, which is No. 1 Lisco, NW cor. NE NE Section 34-31-10. It topped the Mississippi lime at 1,996 feet and the Wilcox at 2,283 86 feet and flowed 315 bbls. the first 24 hours.

In a region where little oil indications have been found the Sasnack Oil Co. has struck dome gas. It is about 100 miles north of Wichita, in Saline County, and is No. 1 Davis. NE cor NW SW Section 29-14-2s, and it had chat at 2,773 feet and 7,000,000 feet of gas at 2,839 feet. While no oil or gas has been found in this region, the test attracted considerable attention because it is close to the theoretical Abilene arch, along which there has been considerable leasing and also core drilling for more than a year.

Butler County Completions

Clark & Erwin and others have abandoned as dry their No. 1, NE cor SW SW NW, Section 14-28-3. Stafford has abandoned the location for his No. 4, NE cor. NW SE, Section 26-27-4. Empire Gas & Fuel Co.'s No. 43, NE cor. SW NE SE, Section 10-28-4, sand 2,025-47 feet, is flowing 175 bbls. oil and 10 bbls. water. Phillips Petroleum Co.'s No. 1, NW cor. NE SW SW, Section 12-27-7, sand at 2,694-2,730 feet, was shot with 120 quarts and swabbed 300 bbls. Magnolia Petroleum Co. has abandoned as dry at 3,139 feet, its No. 4, NE cor. SW NE NE, Section 20-28-6. Richmond Drilling Co.'s No. 1-A, NW cor. SW NE NE, Section 17-27-6, is making 34 bbls. oil and 40 bbls. water in sand 3,120-25 feet. Phillips Petroleum Co.'s No. 3, NE cor. NW NW, Section 13-27-7, sand 2,654-2,709, was shot with 140 quarts and made 260 bbls. First oil was at 2,669 feet. Mid-Kansas Oil and Gas Co.'s No. 3, NW cor. SE NW NW, Section 23-27-7, sand at 2,697-2,763 feet, was shot with 80 quarts and made 150 bbls. Magnolia Petroleum Co.'s No. 1, NW cor. SE SE NE, Section 4-28-6, sand 3,056-66 feet, swabbed 357 bbls. and pumped 315 bbls. John Herron and others have plugged back their No. 1, NE cor. SW SW NE, Section 30-28-7, to 2,831 feet, where it pumped 70 bbls. oil and 75 bbls. water. The well had drilled 8 feet out of the sand at 2,818-31 feet.

Butler County New Operations

Allison & Fitzwilliams are rigging up No. 1 Pierce, NE cor. NW NE, Section 28-25-4. Stafford & Son have a rig up for No. 9 Stafford, NE cor. SE NE SE, Section 26-27-4. P. G. Reynolds and others have a rig up for No. 1-A Covert, SW. cor. SE NW, Section 36-27-5. Dixie Oil Co. is drilling at 900 feet in No. 1 Weaver, NE cor. SW SW NW, Section 12-28-5. Richmond Drilling Co.'s No. 1-A, NE cor. SW NE NE, Section 17-27-6, has 20 bbls. (estimated) and considerable water from sand at 3,120-25 feet. Able & Tunney and White Eagle Oil & Refining Co. have spudded No. 1 SE cor. SE, Section 1-27-7, Phillips Petroleum Co.'s No. 3, SW cor. NE NW NE, Section 13-27-7, sand 2,654-2,709 feet, made 180 barrels. natural at 2,669 feet, was shot with 140 quarts and bridged. Mid-Kansas Oil & Gas Co.'s No. 3, NW cor. SE NW NW, Section 23-27-7, sand at 2,697-2,763 feet, will be shot. The same company has a location for No. 5 Barnhill, SW cor. NE NW NW, Section 23-27-7. Roy Ramsey is drilling at 260 feet in No. 3 Plumer, SE cor. SE, Section 5-29-5. This is a twin to an

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Era of Deeper Drilling in Gulf Coast

Operators Feel Future Production Must Be Found in Lower Horizons. Such Operations Very Expensive

By P. L. McGreal
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Nov. 8.—The coastal plains region is experiencing an era of deep sand drilling and operators are naturally interested in the success or failure of these ventures. The deep tests are the results of lower sands producing at Spindletop and on the southwest side of the Sour Lake Pool as well as the north-northwest flank of the dome at Pierce Junction.

It is a consensus of opinion among operators that the future of the coastal region rests on finding productive deep sands. The pools developed during recent years, such as Nash Dome, 7 miles southwest of Damon Mound; the Boling Pool in Wharton County, 12 miles west of Damon, with sands between 2,500 and 3,000 feet, have not been as prolific producers as the older districts, comparing the amount of development work performed. The South Liberty Pool was a disappointment, but the recent extension of its limits to the west across the Trinity River may prove more remunerative to the operators.

With the search for deeper sands that will prove commercially profitable, comes another phase of the situation. Only the strong financial major corporations can indulge in this sort of exploration work for any length of time. The cost of the deep sand tests are prohibitive as far as the individual operator or small company is concerned. A few failures and they would be seriously crippled financially. Even the major corporations find it to their advantage to drill these prospects jointly, as witness the case of the Vacuum Oil Co. and the Gulf Production Co. at Lockport, La.; the Sun and the Humble Oil & Refining Co. at Johnson Bayou, Cameron Parish, La.; the Humphrey Corp. and Mills Bennet Production Co. at Barber Hill, Chambers County, Texas, and other instances.

The individuals have turned to securing royalty interests in acreage being tested or in prospect and thus the desire to speculate is satisfied. Trading in royalties, either actual or prospective, is as keen and active as is trading in leases in north Texas or Oklahoma.

Some Deep Holes

Deep tests are now being drilled in 11 of the 32 producing pools in the coastal area, exclusive of Spindletop. The deepest is at Lockport, Calcasieu Parish, Louisiana, where the Vacuum-Gulf's joint No. 4 Lock-Moore is below 6,300 feet. It is the record deep hole to date in the history of the south Texas-south Louisiana Field. The Sun-Humble companies are below 5,200 feet at Johnson Bayou, Cameron Parish. H. H. Hanzsen and the Union Sulphur Co. just abandoned a joint test in Jeff Davis Parish below 4,600 feet.

The Gulf Production Co.'s No. 6 Hirsch in the bay water at Goose Creek is nearing 5,600 feet. The Texhoma Oil Co. abandoned No. 9 Chesson in the Orange Pool during the week at 4,875 feet. The Sun Oil Co.'s No. 8-C Cade at High Island, Galveston County, is below 4,915 feet. Blue Ridge has a small well at 4,000 feet. The Texas Company has one on the northeast flank of the Boling Dome that is drilling below 4,500 feet. Another hole is drilling below 4,800 feet in the Hull Pool. The Humphrey Corp. and Bennett Production Co. are preparing to bail after setting screen in 15 feet of sand in No. 3 Barber on the east side of Barber Hill at 4,120 feet.

Among the deep wildcats is the Gulf company's No. 2 Bordages, off the Fannette Dome, Jefferson County, sidetracking at 4,500 feet. The company was preparing to test at 5,119 feet when the drill pipe twisted off and the sidetracking job resulted. The same company just abandoned No. 1 Parkinson, Hawkins Dome, Matagorda County, at 4,590 feet. Its No. 1 Perry on the south side of the Stratton Ridge Dome in Brazoria County showed salt water at 3,200 feet and will be drilled deeper. In the southern part of the same county, the Rycade Petroleum Co.'s No. 3 Allen Dome, is drilling around 3,325 feet.

Results for the Week

The estimated daily average gross production for the week of November 6 is placed at 178,810 bbls., an increase of 1,405 bbls., compared with the previous week.

The estimate for each pool is as follows:

District—	Daily Av.
Boling	2,350
Batson	1,650
Blue Ridge	1,725
Barber Hill	1,160
Big Creek	1,300
Dayton	100
Damon Mound	915
Edgerly (La.)	700
Goose Creek	7,125
Humble	4,750
Hull	20,900
High Island	100
Jennings (La.)	1,075
Lockport (La.)	3,750
Markham	160
Nash Dome	475
Orange	6,700
Pierce Junction	4,665
Orchard	80
Piedras Fintas	195
Spindletop	92,700
Saratoga	1,325
Sour Lake	6,325
South Liberty	4,050
Vinton (La.)	5,600
Welsh-Anse La Bute (La.)	75
West Columbia	8,600
Miscellaneous	260
Total	178,810

Southwest Fields

The estimated gross for the Southwest Fields is placed at 42,890 bbls. for the same week against 43,080 bbls. last week. The figures for each field is as follows:

Field—	Daily Av.
Luling	20,300
Mirando	16,125
Somerset	2,075
Callihan	50
Rockdale-Minerva	940
Lockhart (Lytton Springs)	3,400
Total	42,890
Grand total for week	221,700
Grand total last week	220,485
Net increase	1,215

New Production

There is a marked decrease in new production this week as compared with last week, only 11,065 bbls. being developed. The following table briefly reflects the activity of the week:

District—	Comp.	Prod.	Dry	S.W.	Gas	Blg.
Batson	4	0	2	2	0	1
Barber Hill	0	0	0	0	0	1
Blue Ridge	1	75	0	0	0	0
Big Creek	1	600	0	0	0	0
Edgerly	0	0	0	0	0	1
Goose Creek	1	0	0	1	0	0
Humble	1	0	1	0	0	0
High Island	1	0	1	0	0	0
Hull	2	1,400	0	0	0	0
Lockport	2	800	0	0	1	0
Orange	2	1,000	1	0	0	0
Spindletop	9	5,950	5	1	0	2
Sour Lake	2	850	0	0	0	1
W. Columbia	1	200	0	0	0	0
Vinton	3	90	0	1	0	0
Misc.	3	100	1	1	0	0
Totals	33	11,065	11	6	1	6
Last week	26	33,620	5	0	0	0

The gross production for October is placed at 5,463,347 bbls., compared with 5,808,510 bbls. during September. This is a decline of 345,163 bbls. The gross for the Spindletop Pool is 2,566,397 bbls., or 429,173 bbls. less than during the month of September.

Wells Completed

In the Batson Pool, the Capitol Oil Co.'s No. 4 Hodges bailed dry on the north side at 3,725 feet. The Ada Belle Oil Co.'s No. 111 Texas did the same at 1,050 feet. The Gulf Production Co. got salt water in No. 64 Choate at 1,160 feet as did S. R. Buchanan in No. 91 Milhome at 1,675 feet. The East Batson Oil Co.'s No. 14 State Land is bailing at 1,075 feet.

The Big Creek Pool in Fort Bend County loomed up with its first producer in several months. It is the Gulf Production Co.'s No. 34 Davis, flowing 600 bbls. by heads at 2,800 feet.

The Sinclair Oil & Gas Co. got a small well in No. 2 Davidson on the east side at Blue Ridge. It is pumping 75 bbls. at 4,000 feet. The Humble Oil & Refining Co.'s No. 31 Peninsula bailed salt water at 2,025 feet.

John Deering went into rock salt in No. 4 Bissonnett on the northwest side of the Humble Pool at 3,441 feet. Getting that formation at that depth on that side of the dome was a surprise. During the deep sand boom there in 1915 The Texas Company drilled into rock salt on the Wheeler-Pickens strip on the east side for more than 1,000 feet, abandoning the hole below 5,100 feet. The defined salt area there now extends about 4 miles across from the east to the northwest. Martin and others' No. 1 Williams on the southwest side, is showing oil and gas around 1,700 feet.

In Other Pools

In the Hull Pool, the Gulf Production Co.'s No. 73 Phoenix is flowing 2,000 bbls. of fluid, 50 per cent oil, at 3,700 feet. The Texas Company's No. 1 Armlin fee is making 400 bbls. by heads at 3,500 feet.

At High Island, the Sun Oil Co.'s No. 1 Lockhart was abandoned at 1,425 feet. Its No. 11 V. Cade is drilling around 2,800 feet. The Island Oil Co.'s No. 1 McCarthy is at 2,345 feet.

In the Orange Pool, the Brownie Babbittee Oil Co.'s No. 7 McLean, a worked-over hole, came back at 3,600 feet flowing 1,200 bbls. of fluid, 20 per cent sediment and water. The well is six years old and been worked over several times. The Texhoma Oil Co. abandoned No. 9 Chesson at 4,875 feet.

On the southwest side at Sour Lake the Humphreys Corp.'s No. 2 Oxford-Kelly heads 250 bbls. at 3,875 feet. Its No. 1-C Bashara is bailing at 4,000 feet. The Gulf Production Co.'s No. 9 C. L. Jackson, rated last week as a 240-bbl. well, is flowing 600 bbls. with ½-inch choker on at 3,700 feet.

The Gulf Production Co.'s No. 1 W. H. Jones on the northwest side at Pierce Junction will make a pumper at 3,700 feet. Eunice & Carpenter's No. 1 Bullock-Nash is bailing at 3,625 feet. The Texas Exploration Co.'s No. 10 Dooley is deepening from 3,850 feet where it bailed salt water.

The first completion in several months in the West Columbia Pool is The Texas Company's No. 62 Hogg, making 800 bbls. of fluid, 75 per cent water, at 2,980 feet. Same company's No. 12 Abrams there is drilling at 2,980 feet. The Hyde Production Co.'s No. 2 Masterson is drilling around 3,225 feet.

South Louisiana Pools

In the Edgerly Pool, the Rex Petroleum Co.'s No. 3 Hunter is bailing at 4,100 feet. The Edwards Oil Co.'s No. 4 Landry is drilling at 2,718 feet.

The Texas Company's No. 16 Vincent

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SPINDLETOP DRILLING INTERRUPTED BY FIRE WHICH MENACED FIELD

By P. L. McGreal

BEAUMONT, Tex., Nov. 8.—Fire, supposedly originating from a spark engendered when several joints of pipe struck each other, ignited the gas from the Rio Bravo Oil Co.'s No. 53 T. & N. O. right of way Thursday, and for a time threatened the entire deep sand section of the Spindletop Pool. The blaze started early in the morning while a crew was bailing No. 53 at 2,900 feet. The flowing oil caught fire, making a spectacular blaze. The derrick, drilling rig and pipe connections on No. 53 were destroyed and the fire spread to wells Nos. 3 and 5 of the same company. These were pumpers and the derricks were destroyed. Wooden derricks over the Yount Lee Oil Co.'s Nos. 5 and 6 fee were cut down to prevent the flames from spreading, after the derrick over the Gulf Production Co.'s No. 5 Mann was burned.

The Beaumont and Port Arthur fire departments used chemicals liberally, while 1,000 men employed in the pool threw up fire ditches and connected 34 boilers the steam from which was turned on the fire and smothered the flames, after a 10-hour fight. The loss including derricks, oil, rigs and other equipment is estimated at $100,000, the Rio Bravo Oil Co. being the heaviest loser.

The original cap rock section was swept by flames in the same manner 25 years ago and practically every derrick, drilling rig and tank consumed due to the poor facilities with which to battle oil fires in those days. Thousands of gallons of foamite were used Thursday to check the flames until the steam boilers could be connected. The derricks are from 50 to 150 feet from each other and the fact that the flames were confined to a small area is considered remarkable.

The gross production of the Spindletop Pool January to October of this year is estimated at 9,631,782 bbls. The deep sand section has 191 producers. The original pool was opened in 1901, but the peak producing year was during 1902 with 17,420,940 bbls. The gross during 1903 was 8,600,905 bbls. so that the gross for 10 months of this year is 1,030,877 bbls. in excess of 1903. The original cap rock area covers about 200 acres. The present deep sand section includes approximately 20 acres. The cap rock production was from 900 to 1,100 feet. The deep sands range from 2,700 to 5,000 feet.

The performance at Spindletop is a surprise to the oil world. Never before has any oil field staged a comeback like it. The discovery of a sand last week by the Yount Lee Oil Co. in its No. 9 fee below 5,000 feet was a surprise to the talent, including geologists. The well was rated at 10,000 bbls. potential production, but was choked down to 6,000 bbls. It is now flowing 3,500 bbls., 6 per cent water. The gravity is 32 instead of 29.5 as first reported. Screen was set in 20 feet of pay sand. The tendency now is to drill deeper for the same pay.

New Pay or Dip?

Opinions differ as to whether the sand at 5,025 feet is really a new pay or merely a dip. Those who hold to the dip theory point to the gravity in substantiation, since it is about the same as the wells producing from the higher level. Most of the producers are making water, but this is not unusual in coastal region. The flowing wells are choked down

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Southwest Texas Activities Extended

Kleberg County Test to Be Drilled Deeper. Seventh Gas Well Completed in Adams Field, Medina County

B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Nov. 8—Golden West Oil Co. completed its No. 1 Adams in the Adams gas field in Medina County last week, gauging 7,200,000 feet daily of dry gas, extending the field a quarter of a mile to the north. It is the seventh gas well completed in the field and gives the field an open flow of about 75,000,000 feet daily. In proven fields in Southwest Texas the past week interest was scattered over the whole country. In Kleberg County the Humble Oil & Refining Co.'s No. 1-B, Dennett, which was reported pumping 100 bbls. initial, pure pipeline oil at 2,072 feet, declined in production and the company has pulled the 4-inch screen and will drill deeper. It has set 8¼-inch casing and has a big type rig and derrick and will continue to drill as long as geology encourages it. There are several sands that have been penetrated down to 2,930 feet. The pool has been proven at a depth of 2,052-2,150 feet with five wells completed. A sixth is drilling with showing of oil at 2,180 feet.

Duval County—Cole Field

Cole Petroleum Co.'s No. 23 Benavides, Survey 81, Block 9, 150 feet to southwest and northwest lines, has moved back on old hole and is reaming at 780 feet; No. 27 Benavides in Callahan tract, 450 feet to northeast and southeast lines, has spudded in and is drilling at 700 feet; No. 28 Benavides, Survey 13, Block 15, 450 feet to northwest line and 1,050 feet to northeast lines, is moving on.

Piedras Pintas

Humble Oil & Refining Co.'s No. 1 Becher, Survey 531, 480 feet to north line and 2,075 feet to west line, at 3,203 feet bailed dry, and will pull screen and drill deeper. Gulf Petroleum Co.'s No. 1 Tinney, Survey 8, 800 feet to south line and 100 feet to west line, is drilling at 1,100 feet.

O'Hern & Seacord

Associated Oil Co.'s No. 1 S. Benavides, 600 feet to northwest and northeast lines, has set casing at 1,552 feet. Buffman and others' No. 1 J. Benavides, Block 38, Subdivision 1, Mesquite Ranch, tested salt water and a little oil at 1,694-1,700 feet. O'Hern & Seacord's No. 2 Benavides, Survey 174, Block 12, 300 feet to northwest and northeast lines, is drilling at 2,673 feet; No. 3-A Benavides, 330 feet to southwest and southeast lines, is drilling at 900 feet.

Jim Hogg County—Randado Pool

Grayburg Oil Co.'s No. 7 Weil, Survey 81, 225 feet to south line and 150 feet to east line, at 1,307 feet, made 20 bbls.; No. 8 Weil, same survey and block, 150 feet to north and east lines, has been abandoned at 1,340 feet; No. 9 Weil, Survey 81, Block 9, has derrick up, 150 feet to north and east lines. Johnson and others' No. 14 Palacious, Survey 291, Block 3, 150 feet to north and west lines, has set casing at 1,278 feet; No. 15 Palacious, Survey 291, Block 2, 150 feet to south and west lines, has set casing at 1,783 feet; No. 18 Palacious, Block 3, Survey 291, 150 feet to south line and 750 feet to west line, has set casing at 1,282 feet; No. 20 Palacious, Survey 291, Block 3, 450 feet to west line and 543 feet to north line, is location. No. 21, Palacious, Block 3, Survey 291, 450 feet to west line and 150 feet to north line of Block 3, Survey 291, is location. No. 22 Palacious, Survey 291, Block 2, 450 feet to west line and 150 feet to south line, has derrick up; No. 23 Palacious, Survey 291, Block 2, 450 feet to west line and 543 feet to north line, is location. Simms Oil Co.'s No. 6 Weil, Survey 81, Block 8, 510 feet to south line and 150 feet to east line, is standing at 1,714 feet; No. 7 Weil, Survey 81, Block 7, 510 feet to north line and 150 feet to west line, at 1,324-38 feet tested salt water and is plugging back; No. 16 Palacious, Survey 291, northwest quarter, 450 feet to north and east lines, at 1,278 feet made 30 bbls.; No. 17 Palacious in northwest quarter of Survey 291 is in sand at 1,274 feet. Magnolia Petroleum Co.'s No. 10 Merchants State Bank, Survey 415, 150 feet to north line and 1,000 feet to west line, is in sand at 1,230 feet and set casing; No. 14 de la Garza, Survey 291, Block 6, 150 feet to north line and 750 feet to west line, is drilling at 1,000 feet. E. L. Smith-Maddox's No. 9 Palacious, Survey 291, 778 feet to north line and 150 feet to west line, at 1,286-92 feet, made 15 bbls. of oil and 5,000,000 feet of gas. Alworth Brothers' No. 1 Garza, Survey 39, 618 feet to southeast line and 150 feet to northwest line, is drilling at 1,925 feet. Moody-Morgan's No. 2 Palacious, Survey 291, Block 12, 330 feet to north line and 150 feet to east line, is moving on.

Henne, Winch & Fariss.

Magnolia Petroleum Co.'s No. 15-B Martinez, Survey 276, 1,674 feet to east line and 1,020 feet to north line, is drilling at 2,018 feet; No. 16-B same survey, 1,400 feet to east and north lines, is drilling at 1,850 feet; No. 17-B, same survey, 1,050 feet to east line and 1,400 feet to north line, has derricked up; No. 18-B, same survey, 1,700 feet to east line and 2,150 feet to north line, has derrick up.

Kitselman & St. Albans

K. & S. Corp.'s No. 49 Holbein, Block 11, 66 feet to north line and 40 feet to east line, is in sand at 2,145-50 feet; No. 50 Holbein, Survey 16, Block 19, 210 feet to south line and 150 feet to west line, has been abandoned at 2,439 feet; No. 51 Holbein, Survey 11, Block 5, 420 feet to north line and 255 feet to west line, is drilling at 800 feet; No. 53 Holbein, Survey 11, Block 4, 150 feet to north line and 40 feet to west line, is location. Associated Oil Co.'s No. 1-B Lopez, Block 20, Share No. 1, 600 feet to south line and 414 feet to west line, is drilling at 3,300 feet; No. 4 Lopez, same share and block, 500 feet to east line and 150 feet to south line, has derrick up. Edwards St. Albans' No. 1 Lopez, Survey 1, Block 19, 150 feet to north and west lines, has derrick up.

Webb County—Schott Pool

G. R. Miller and others' No. 1 Garcia, Block 4, Survey 592, 150 feet to south line and 570 feet to east line, is drilling at 1,654 feet. Marshall and others' No. 1 Garcia, Survey 450, 150 feet to north and west lines, is drilling at 211 feet.

Aviator or Bruni Tracts

Sun Oil Co.'s No. 8 Bruni, Block 44, 810 feet to east line and 1,120 feet to north line, has set casing at 1,695 feet. Crown Central Petroleum Co.'s No. 19 Bruni, Block 15, 450 feet to north and west lines, is in sand at 1,710 feet; location has been made 668 feet to east line and 1,300 feet to north line, in Block 17, for No. 20 Bruni. Straight Eight Oil Co.'s No. 1 Puig, location east of Kirkpatrick test on Puig Ranch, is drilling at 1,625 feet. Associated Oil Co.'s No. 4 Bruni, south half of Block 44, 1,700 feet to east line and 150 feet to north line, has been abandoned at 1,850 feet; No. 5 Bruni, same block, 1,150 feet to east line and 600 feet to north line, is a location. Staley-Wynne's No. 21 Bruni, west half of Block 18, 660 feet to west line and 1,320 feet to north line, is drilling at 1,000 feet.

Mirando Old Field

Crown Central Oil Co.'s No. 10 Garcia, Survey 606, Lot 56, 150 feet to west line and 110 feet to north line, is drilling at 3,785 feet; No. 13 Garcia, Block 27, 150 feet to north and east lines, at 1,596 feet, made 140 bbls. Murchison & Fain's No. 3 Garcia, Survey 58, 600 feet to north line and 1,150 feet to west line, at 1,579, made 40 bbls. Murchison & Fain have made location in Survey 58 for No. 4 Garcia, 600 feet to north line and 1,450 feet to west line.

Carolina—Texas

Associated Oil Co.'s No. 1-B Webster, Survey 684, is coring at 2,624 feet. Morgan Brothers' No. 1 Webster, NW NE NW Survey 684, is drilling at 1,600 feet. Hazlitt-Simmons Corp.'s No. 1 Vela, Block 13, Survey 267, 150 feet to south and east lines, is moving on for test; No. 1 de la Garza, Survey 335, Block 11, 150 feet to north and west lines, is drilling at 2,800 feet. Magnolia Petroleum Co.'s No. 1 Webster NW NW Survey 684, pumped 52 bbls. of 45.6 gravity oil in 11 hours. Houston Oil Co.'s No. 1 Benavides, Survey 683, nearly a northwest offset by two locations to the Magnolia well, is tesing at 2,975 feet. M. & N. Drilling Co.'s No. 1 Vela, Block 12, Survey 1,012, 200 feet to northeast and southeast lines, is drilling at 200 feet.

Medina County—Ina and Adams Fields

Henderson & Holden's No. 5 Adams, east half of Block 8, 615 feet to north line and 884 feet to east line, has made location. Golden West Oil Co.'s No. 1 Adams, 1,500 feet north of Henderson & Holden's No. 3 Adams, topped sand at 924 feet and at 931 feet made 7,200,000 feet of gas.

Zapata County—Mirando Valley

Howard-Staggs and others' No. 1 Hinnant, Survey 126, Block 3, 150 feet to northwest and southwest lines, has spudded in.

Charco Redondo

Duke and others' No. 1 Martinez, Share B, 1 mile northeast of Charco Redondo, at 1,003 feet, tested salt water and some gas and has been abandoned;; rig has been moved 600 feet northeast for No. 2 Martinez. R. V. Hill's No. 3 Martinez, Villa Grant, 5,000 feet to east line and 416 feet to south line, has derrick up. Magnolia Petroleum Co.'s No. 2 Cuellar, Survey 278, 2,177 feet to east line and 150 feet to north line, 600 feet east of No. 1, has spudded in.

Kleberg County

Humble Oil & Refining Co.'s No. 1-C Dennett, 360 feet east of No. 1-B, is in sand 9 feet at 2,180 and coring with show of oil; No. 1-B Dennett, 360 feet north of Kleberg Trustee No. 2, at 2,072 feet, was put on the pump and made 100 bbls. of pipe line oil the first day. Production declined and strainer is being pulled to drill deeper.

Tests in Laredo

There are 111 tests listed in the Laredo territory for the past week compared with 109 for the week before. There were eight new locations made, five oil wells and two gas wells completed and four tests abandoned. Four of the oil wells completed are in the Randado Field in Jim Hogg County and two of these are by the Simms Oil Co. and two by the Magnolia. They added 240 bbls. to the production of the Randado Field and the Sun Oil Co. brought in one 20-bbl. well in the Bruni tract extension of the Aviator Pool. The Sun company's well is its

(Continued on Page 128)

POSSIBILITIES OF AN OIL POOL SIX MILES SOUTH OF THE COLE FIELD

By B. D. Stevenson

SAN ANTONIO, Tex., Nov. 8.—Associated Oil Co. got a 40,000,000-foot gas well at 1,580 feet in No. 1 Benavides, southeast of Bruni in Webb County, about 1½ miles northwest of the O'Hern & Seacord discovery gas well on Survey 174 of Duval County that came in making about 50,000,000 feet of gas and spraying some oil. Depth of the O'Hern & Seacord well is 1,765 feet making the Associated well nearly 200 feet higher and indicating it is nearer the crest of the structure. Max Buffam a few days before tested his No. 1 J. Benavides in Block 38 of Subdivision 3 of the Mesquite ranch, about the same distance northeast of the O'Hern & Seacord well that the Associated is northwest, and he got a salt water well that showed a little oil in a sand at 1,694-1,770 feet.

Since O'Hern & Seacord brought in their discovery well they have drilled No. 2, located 450 feet north of No. 1, and got a showing of oil at the same depth as No. 1 is producing but failed to cement off properly and are now drilling at about 2,700 feet in No. 2 and drilling at about 1,000 feet in No. 3, which is about 450 feet south of No. 1. These are the only wells that have been drilled in that territory and the five wells with the showing of oil in some and the gas in the Associated seems to point to the possibility of an oil pool. O'Hern & Seacord's No. 1 is being used to fire the boilers of the firm's two tests that are drilling and each morning considerable oil must be taken from the pipes, an accumulation, while the well is shut down during the night. The area is 6 miles south of the Cole Field. The situation calls for considerably more drilling on the theory of oil production. At least a gas area 1½ miles long has been proven.

Showing South of Rockdale

South of the city of Rockdale in Milam County the Loewenstein test that a week ago made quite a lot of gas is being drilled deeper. The well is practically wildcat and is having some encouraging showings. It is already determined that the showing of gas in this well calls for additional tests which are being planned.

In Duval County at Noleda the Humble bailed its No. 1 Becher in Survey 531 and got a dry hole. There was a trace of oil that some classed as "dead" oil. The liner has been pulled and the well will be deepened. It was tested at 3,203 feet. The test was close to the Empire Gas & Fuel Co. test made several years ago that went into a sand and made one head of oil. It is about a mile west of the company's No. 4 Walsh and No. 6 Walsh, which have been put on compressed air and are producing. They are the only successful completions thus far and are producing at practically 3,600 feet.

Duval County

Humble Oil & Refining Co. has made location 550 feet south of No. 10 Singer in Survey 4 for No. 11 Singer; No. 5 Schallert, Survey 255, in north central part of survey, is drilling in gumbo at 3,432 feet. Humble-Reiter-Foster's No. 1 Kohler, Survey 406, 660 feet to south line and 660 feet to east line, is drilling in hard shale and lime at 2,128 feet; No. 2 Kohler, Survey 168, 1,320 feet to south

(Continued on Page 126)

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Caddo Well Flows 30 Barrels an Hour

Sand in The Texas Company's No. 2 Curtis 6 Feet Lower Than in No. 1, Which Is Making 1,000 Bbls.

By James H. Dameron
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Nov. 8.—Most interesting of the wildcats was Gulf Refining Co.'s No. 1 England, Section 32-17-6e, which blew out at 2,340 feet making 5,000,000 feet of gas and 10,000 bbls. of fresh water. The test is 12 miles southeast of the Monroe gas field, but the gas in the Richland Parish test is coming from a different horizon. The well is to be killed and casing set for a test.

The Gulf company owns a vast portion of the acreage surrounding the test within a radius of 2 miles. The gas blowout caused no frenzied acreage buying campaign that characterized the Lawson excitement in Arkansas. Leases are being bought, but buyers are following a conservative policy.

In the Shift Tail Lake district in Caddo Parish, The Texas Company brought in its second well on the Curtis lease, Section 14-20-15, the east offset to No. 1 which started off making 3,600 bbls. The new well, No. 2 Curtis, had sand at 2,200 to 2,209 feet and is flowing 30 bbls. an hour through a quarter-inch choke. The sand was 6 feet lower in No. 2 than in No. 1. No. 1 Curtis is about a month old and is making close to 1,000 bbls. daily. The Texas Company is drilling the plug on No. 3 Curtis in the southwest corner of the lease.

Union County Completions

Completions in the Urania Field were of routine character with the north end of the field leading with two good wells.

Most of the attention of Arkansas operators was given to the Lawson area in Union County. Pat Matthews and associates' No. 1 Lewis, Section 14-19-12, was being followed more closely than the others, and it cored salt water sand at 2,658-59 feet. The sand was directly beneath a cap rock. While disappointing to those interested in the field they clung to the belief that another sand is a few feet lower and under a second cap rock. Other tests in that area are due to be tested during the coming week.

While no new completions in Smackover were of a sensational nature, Gulf Refining Co.'s No. 2 Scott, Section 34-15-15, caused some excitement when it blew out at 2,645 feet while being cleaned out. The well was completed in sand at 2,605-45 feet August 23, 1925, making 10,000,000 feet of gas and 100 bbls. of clean oil. It had gone down to 10 bbls. on the pump and blew out making 10,000,000 feet of gas and 3,000 bbls. of fluid, 65 per cent salt water. It is now making around 1,000 bbls. of fluid, 10 per cent cut oil.

Arkansas Fuel Oil Co. put another well on the producing list in the small Blossom sand pool east of Bradley in Lafayette County. The well started off making around 25 bbls. on the pump, but tubing is being pulled and production men believe it can be made to produce considerably more oil than that. No. 4 is the best well of the group in that pool and is making 180 bbls. steady. No. 1 Red River is producing 55 bbls. daily on air and No. 1 Allen is making 40 bbls. daily.

No. 3 Allen is being cleaned out and is expected to make around 100 bbls. a day when put back on the producing list. The oil from that field tests 27.5 gravity.

Production Declines

Production made a sharp decline when the daily average for the division fell more than 3,800 bbls. Caddo heavy and Urania lost heavily for Louisiana, and all fields contributed in Arkansas save El Dorado, which showed a slight gain.

PRODUCTION BY FIELDS

Arkansas	
Smackover heavy	115,115
Smackover light	13,860
El Dorado	7,080
Lisbon	6,835
Nevada	1,800
Stephens	1,525
Total	146,215
Louisiana	
Bellevue	2,080
Caddo light	11,165
Caddo heavy	3,455
Cotton Valley	6,940
De Soto and Red River	4,220
Elm Grove	585
Haynesville	9,150
Homer	5,560
Urania	14,350
Total	57,505
Total both fields	203,720
Total last week	207,575
Loss	3,855

Bossier Parish

In the Elm Grove, Palmer Corp.'s No. 1 Marshall, Section 19-16-11, was completed at 1,900 feet making 700,000 feet of gas. In the Bellevue Field, Autrey Oil Co.'s No. 2 Snyder, Section 22-19-11, is drilling white shale at 401 feet. Location was made for Gulf Refining Co.'s No. 18 Hodges, 1,574 feet west and 921 feet south center of Section 19-16-11.

Caddo Parish

Gulf Refining Co.'s No. 252 Ferry Lake, Section 15-20-16, was good for 22 bbls. of 44 gravity oil on the pump at 2,263 feet. Thomason and associates' No. 3 Muslow fee, Section 31-21-15, is pumping 300 bbls. of fluid, 25 per cent salt water, from the chalk rock at 1,695 feet. Dixie Oil Co.'s No. 18 Muslow, Section 18-20-15, was dry at 2,307 feet and casing is being pulled. In the Shift Tail Lake district, Victor Wenzell's No. 1 Wemple, Section 14-20-15, was abandoned at 2,265 feet.

Drilling operations around that district are all nearing the Woodbine. Gulf Refining Co.'s No. 1 Wemple, Section 14-20-15, is drilling gumbo at 2,008 feet; No. 2 is going through gumbo at 2,150 feet; The Texas Company's No. 2 Curtis, Section 14-20-15, is drilling the plug at 2,195 feet; 6-inch was cemented at 2,188 feet at No. 3 and No. 4 is drilling at 1,735 feet. Six-inch casing at 2,160 feet was shot at Victor Wenzell's No. 2 Hunsicker, Section 15-20-15; No. 3 is being rigged; No. 4 is a derrick and No. 5 is a rig. Wenzell's No. 2 Wemple, Section 14-20-15, is being bailed to test at 2,237 feet.

Of the deep tests, Dixie Oil Co.'s No. 1 Jolly, Section 27-22-15, is fishing for cable tools at 4,415 feet. The drill stem is being fished for at No. 10 Slattery, Section 27-21-15, at 3,400 feet. Magnolia company's No. 16 Dillon, Section 24-21-15, is being cored at 3,676 feet. Same company's No. 1 Wiley Bradford, Section 24-21-15, is drilling shale at 4,096 feet. The Texas Company's No. 42 C. M. L. Co., Section 23-21-15, sanded up and is being cleaned out at 3,898 feet.

Operations Increase

A slight increase in operations in other parts of Caddo was reported during the week. Bethany Oil & Gas Co.'s No. 1 Smith, Section 1-20-16, is drilling at 910 feet. Bayou State Oil Co.'s No. 24 Peak, Section 23-22-15, is waiting for a standard rig at 1,040 feet and a derrick is up for No. 25. Bussa and associates' No. 8 Allen, Section 23-22-15, is drilling at 1,025 feet.

W. H. Cook's No. 1 Muslow, Section 32-21-15, is drilling at 1,350 feet. A rig is being moved in for Dixie Oil Co.'s No. 1-C Noel, Section 15-20-15, and a rig is going in for No. 80 Robertshaw, Section 12-21-15; No. 81 is drilling at 1,659 feet. Howard and associates' No. 1 Pyron, Section 15-21-15, is waiting for a standard rig at 1,683 feet. Morris Drilling Co.'s No. 2 Pala Oil Co. fee, Section 1-20-16, is drilling at 1,900 feet. Ohio Oil Co.'s No. 1 Caddo Levee Board, Section 28-13-26, topped the Nacatoch sand at 1,465 feet and is drilling chalk rock at 2,181 feet. Ohio company's No. 23 E. K. Smith, Section 7-21-14, is spudding.

Six-inch casing was cemented at 1,030 feet at Ramsey and associates' No. 10 Powell, 1,140 feet east and 1,050 feet north SW cor. Section 36-22-16. Standish Oil & Refining Co.'s No. 9 Allen, Section 23-22-15, is waiting for a standard rig at 1,060 feet, and No. 10 is a rig. Superior Oil Co.'s No. 7 Youree, Section 26-20-15, set 6-inch casing at 750 feet and is testing at 793 feet for gas. The Texas Company's No. 65 Caddo Levee Board, Section 33-21-16, is waiting for a standard rig at 1,828 feet and No. 66 Caddo Levee Board, 3,590 feet south and 775 feet west NE cor. Section 33-21-16, is a derrick.

Tholl Oil Co.'s No. 1 Allday, Section 31-21-15, is drilling gas rock at 950 feet. Thomason and associates' No. 2 Muslow, Section 31-21-15, is being bailed to test at 1,650 feet; No. 5 Muslow, 196 feet south and 1,000 feet west NE cor. SE, is drilling at 1,000 feet. Unity Petroleum Co.'s No. 6 Crystal, Section 14-21-16, had a gas and salt water blowout at 1,932 feet and is losing returns; No. 7 is being swabbed at 1,600 feet; 5⅞-inch casing was cemented at 1,059 feet at No. 10. A rig is up for Woodley Petroleum Co.'s No. 1 Muslow, 1,120 feet north and 200 feet west SE cor. Section 31-21-15.

Claiborne Parish

In the Haynesville Field, Ohio Oil Co.'s No. 9 Milner, Section 22-23-8, was completed in sand at 2,780 to 2,812 feet making 32 bbls. on the pump.

LaSalle Parish

Urania's best well of the week was Oil Operators Trust's No. 7 Urania, Section 7-10-2e, in the north part of the field, which came in flowing 400 bbls. from sand at 1,518-23 feet. Another good well in that section was Hunt, McCurry & Zoder's No. 5 Urania, Section 7-10-2e, which is pumping 200 bbls. of clean oil from sand at 1,511-16 feet. Mistrot and associates' No. 1 Russell, Section 26-10-1e, is pumping 10 bbls. of fluid, 50 per cent salt water, from sand at 1,549-54 feet. The derrick was moved and location for Carter & Hurley's No. 1-C Urania, Section 3-9-1e, was abandoned. Sterling, Inc.'s, No. 2 Winberry, Section 18-10-2e, was a 25-bbl. pumper at 1,510-13 feet.

Six-inch casing was cemented at 1,527 feet at O. W. Clark's No. 3 Miles, Section 25-10-1e, and arrangements are being made to test 5 feet of sand topped at 1,488 feet at No. 6 Tullos, Section 23-10-1e. Chal Daniel's No. 1 Urania, Section 2-9-1e, is being cleaned out at 1,495 feet. Hartzanzo Oil Co.'s No. 2 Urania, Section 7-10-2e, was dry in sand at 1,514-21 feet and is to be deepened. Hog Creek Oil Co.'s No. 1 Dawson, Section 6-10-2e, is drilling at 1,400 feet. H. L. Hunt's No. 5 State, Section 28-10-1e, is being bailed to test at 1,491-98 feet. Six-inch was cemented at 1,514 feet at Hunt-McCurry & Zoder's No. 7 Urania, Section 7-10-2e.

Six-inch casing was cemented at 1,537 feet at Louisiana Oil Refining Corp.'s No. 36-B Tremont, Section 25-10-1e. A derrick is up for Natural Gas & Fuel Corp.'s No. 1 Missouri Pacific, 465 feet east and 645 feet north SW cor. SE NE, Section 26-10-1e. Ten-inch casing was set at 102 feet at Joyce Richardson's No.

BIG GASSER 12 MILES FROM MONROE INTERESTS LOUISIANA OPERATORS

By James H. Dameron

EL DORADO, Ark., Nov. 6.—With nothing of a sensational nature breaking in Lawson, the Gulf Refining Co.'s No. 1 on the England Planting Co.'s land, Section 32-17-6e, Richland Parish, held the attention of wildcatters when it blew in making 5,000,000 feet of gas and 10,000 bbls. of fresh water. The test is about 12 miles southeast of the Monroe gas field.

Drillers were pulling out of the hole to change bits and had two foubles of the drill stem out when the test blew out. The last string of casing was a string of 10-inch set at 471 feet and the rest is open hole. From 2,295 feet to 2,335 feet the bit went through broken sand rock and from 2,335-40 feet was a sandy shale formation. The gas is coming from an enitrely different formation than production in Monroe. The boiler is being moved back and the test will be killed, and an effort made to set casing.

Another interesting wildcat being followed is Grigsby & Co.'s No. 1 Adams, Section 22-17-4w, Jackson Parish, and southwest of Ruston. The test is showing a little gas and drilling in lime at 2,415 feet.

In Lafayette County, Arkansas, the Arkansas Fuel Oil Co. completed another producer in the small Blossom sand pool east of the town of Bradley. The well was good for 20 bbls. on the pump and makes the fifth producer in that peculiar area. All of the wells are in a direct line running north and south and flanked by dry holes.

One deep test in DeSoto Parish was a duster below 3,000 feet and two tests in Webster Parish are nearing the mile depth, both having passed the 5,000-foot level.

Union County

Bonderant and associates' No. 1 Garner, Section 8-18-12, which has been shut down for several weeks, has resumed drilling and is going ahead at 2,242 feet. Calgo Oil Co.'s No. 1 Primm, Section 9-18-17, is drilling at 2,632 feet. Gulf Refining Co.'s No. 1-A Slaughter, Section 20-17-16, is drilling sand rock at 2,697 feet. H. L. Hunt's No. 1 Dykes, Section 21-18-12, cored oil sand at 2,672-74 feet and is reaming to set 8¼-inch casing. E. M. Jones' No. 9 Murphy, Section 17-16-15, is drilling the red bed at 3,490 feet. Marine Oil Co.'s No. 1 Thompson, Section 10-18-13, is being delayed while the liner is fished out at 2,537 feet. H. O. Meller's No. 1 Hill, Section 10-18-16, tested a show of oil and gas at 2,117 feet, corrected depth, and is coring at 2,424 feet. Natural Gas & Fuel Corp. is whipstocking casing at 2,440 feet at No. 1 Cordell, Section 9-18-13. Owens and associaes' No. 1 Duke, Section 6-17-16, is drilling at 2,665 feet. Peer Oil Corp.'s No. 1 Hollis, Section 36-18-12, is shut down at 2,603 feet for orders. Southern Crude Oil Purchasing Co.'s No. 1 Hill, Section 5-18-13, had sand at 2,514-22 feet and 8¼-inch casing is being cemented at 2,504 feet. Superior Oil Co.'s No. 1 Cordell, Section 5-18-13, is a rig.

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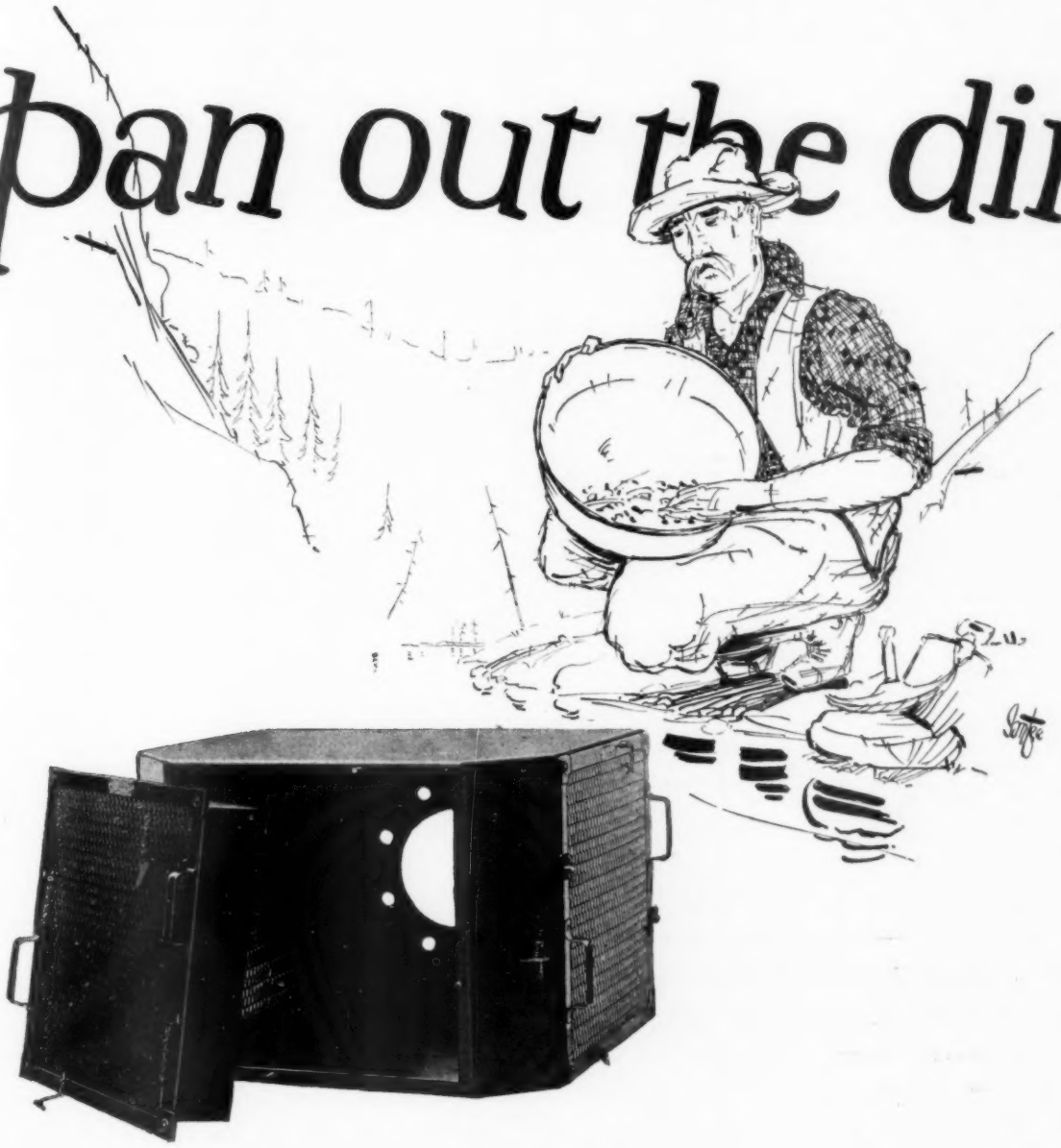

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1 Hatfield, Section 7-10-2e. Six-inch was cemented at 1,537 feet at Rowe and associates' No. 1 Hatfield, Section 7-10-2e. Six-inch was cemented at 1,515 feet at Shreveport Oil Corp.'s No. 4 Pendarvis, Section 26-10-1e. Wetherbee and associates' No. 6-A Urania, NE cor. SE SW, Section 2-9-1e, is a rig. O. F. Whittaker's No. 1 Hardtner, Section 26-10-1e, is drilling at 500 feet. The plug at 1,500 feet is being drilled at Wooten and associates' No. 2 King, Section 36-10-1e.

Monroe District

Ouachita Gas Co.'s No. 7 Allison, Section 37-21-4e, is making 3,000,000 feet of gas from 2,223 feet. Palmer Corp.'s No. 1 McHenry Lynch, Section 18-19-5e, is making 1,500,000 feet of gas from 2,181 feet. Culver and associates moved the rig and abandoned No. 1 Cordell, Section 23-15-3e, at 1,360 feet.

Gulf Refining Co.'s No. 1 West Virginia, Section 17-17-5e, is drilling broken lime at 2,220 feet. Eight-inch casing was cemented at 800 feet at O. M. Grasham's No. 1 Peak, Section 6-20-4e, and Grasham's No. 1 Williams, Section 6-20-4e, is drilling rock at 720 feet. R. W. Rhodes' No. 1 Hutch, Section 28-23-2, is a rig. United Carbon Co.'s No. 1 White, Section 32-21-4e, is drilling at 1,610 feet.

Webster Parish

Magnolia Petroleum Co.'s No. 3-A Turner, Section 21-21-10, in Cotton Valley was completed at 2,542 feet pumping 125 bbls. Same company's No. 1 R. M. Lewis, Section 25-23-10, was completed at 2,724 feet making 1,500,000 feet of gas.

Arrangements are being made to set 6-inch casing at 509 feet on rock at LaBorde's No. 1 Bruner, Section 30-19-10. J. R. Garrison's No. 1 Hudson, Section 17-19-10, is drilling at 276 feet. Humble Oil & Refining Co.'s No. 5-B Davis, Section 23-21-10, is drilling gumbo at 3,614 feet. Six-inch casing was cemented at 2,465 feet at Magnolia Petroleum Co.'s No. 4 Tiner, Section 21-21-10. Ohio Oil Co.'s No. 4 Bank of Cotton Valley, Section 22-21-10, is drilling lime at 3,609 feet. Smitherman & McDonald's No. 1 Oakley, Section 29-23-11, in the Springhill district, passed the 5,000-foot level and is drilling at 5,020 feet. Southern Crude Oil Purchasing Co. and Ramsey's No. 1 Munn in Shangaloo is fishing, total depth 4,620 feet.

Union County

The best Union County well for the week was Federal Petroleum Co.'s No. 6-B Wells, Section 15-16-15, in the Norphlet sector which is making 100 bbls. naturally from sand at 2,603-12 feet. In the same area, Gladys Belle Oil Co.'s No. 9 Cook, Section 16-16-15, was finished in sand at 2,698 to 2,706 feet as a 30,000,000-foot dry gas well. West of Smackover, G. J. Child's No 4 fee, Section 8-16-16, was good for 50 bbls., 6 per cent salt water, on the pump from sand at 2,603-18 feet. Northwest of Kenova, Keen & Woolf Oil Co.'s No. 5 Murphy, Section 9-16-15, an old well drilled deeper, is making 5,000,000 feet of gas, 30 bbls. of fluid, 50 per cent salt water, from sand at 2,671-72 feet.

Southern Crude Oil Purchasing Co. abandoned location for No. 1 Murphy, Section 33-16-16.

In the El Dorado Field, Standard Oil Co.'s No. 4 Reynolds, Section 6-18-15, is a 30-bbl. pumper at 2,182 feet.

Two wells were completed in the south end of the Lisbon Field. Imperial Oil & Gas Co.'s No. 4 Parker, Section 21-17-16, is making 22 bbls. on the pump from sand at 2,140-74 feet and same company's No. 2 Stocks, Section 21-17-16, is making 30 bbls. on the pump from sand at 2,152-78 feet.

Ackerly and associates' No. 1 Murphy, Section 1-17-16, is being reamed to the bottom at 2,165 feet. Clark & Greer's No. 1 LeCroy, Section 6-18-15, tested a show of oil and gas at 2,140 feet and a liner is being set to test 33 feet of broken sand at 2,137-70 feet. A derrick is up for Crescent Petroleum Co.'s No. 1 Saxon, Section 5-16-16. A derrick is up for Federal Petroleum Co.'s No. 8 Ballard, NW cor. SW SE, Section 10-16-15. W. H. Harper's No. 1 Matthews, Section 34-16-16, is drilling lime at 2,250 feet.

Humble Oil & Refining Co.'s No. 4 Snyder, Section 21-17-16, is drilling at 526 feet. Imperial Oil & Gas Co 's No. 1-A Ramsey, Section 21-17-16, is drilling at 1,800 feet; No. 2-A, NW cor. SW SW, Section 21-17-16, is a derrick and No. 4-A, SE cor. SW SW, is a rig. Lion Oil & Refining Co.'s No. 8-C Bilyew, Section 8-16-15, is drilling at 2,650 feet. Lion company's No. 2 Werner, Section 21-17-16, is drilling at 1,300 feet, and 10-inch was set at 108 feet at No. 4. Eight and one-quarter inch casing was cemented at 2,381 feet at Lion company's No. 8-A Lawton, Section 10-16-15. Magnolia Petroleum Co.'s No. 2 Freeman, Section 7-16-16, is drilling at 1,000 feet.

Magnolia Petroleum Co.'s No. 4 Childs, Section 8-16-16, was dry at 2,612 feet and is being bailed to test at 2,617 feet. Six-inch casing was cemented at 2,132 feet at Magnolia company's No. 7 Halsey, Section 20-17-16, and at 2,140 feet at No. 8 Halsey. Magnolia company's No. 1 Murphy, Section 28-16-16, is drilling at 3,120 feet. Murdock and associates' No. 4 Hays, Section 4-16-15, is drilling with cable tools at 2,343 feet, and No. 1 Vestal, Section 17-16-15, tested salt water with a show of oil at 2,794 feet. The test was drilled to 2,800 feet and is being bailed. Six-inch casing is being set at 2,132 feet at Ohio Oil Co.'s No. 5 Stocks, Section 21-17-16.

S. L. Ramage's No. 1 Ezell, Section 24-16-15, is drilling hard lime at 2,670 feet. Sam Richardson's No. 2-M Murphy, Section 4-16-15, is waiting for a standard rig at 2,014 feet. Rovenger Oil Corp.'s No. 10 Dumas, Section 9-17-16, had 30 feet of broken sand at 2,070 to 2,100 feet and is waiting for a standard rig. C. L. Saxon5s No. 4 fee, Section 4-16-16, is drilling at 2,430 feet. Southern Crude Oil Purchasing Co.'s No. 10 Graves,, Section 3-16-15, is drilling sand and lime at 3,402 feet. Sure Oil Co.'s No. 8 Flenniken, Section 5-16-15, is setting 10-inch at 414 feet. Unity Petroleum Co.'s No. 5 Snydor, Section 21-17-16, had broken sand at 2,128-98 feet and is waiting for a standard rig; No. 6 is a rig and a derrick is up for No. 7, SW cor. SW SE.

Ouachita County

Gulf Refining Co. is rigging up old No. 8-A Bennett, Section 33-15-15, to deepen. The only two completions in Ouachita during the week were on Standard Oil Co. leases. No. 12-B Murphy, Section 28-15-15, is making 90 bbls. on the pump from sand at 2,604-14 feet. No. 7-B Umsted, Section 32-15-15, is making 30,000,000 feet of dry gas from sand at 2,647 feet. W. R. Keever's No. 2 Neeley, Section 27-15-16, tested 500 feet of fluid, 50 per cent salt water, from 2,272 feet and is shut down for orders.

Ohio Oil Co.'s No. 19 Cramer, Section 27-15-16, has 100 feet of oil in the hole from sand at 2,024-34 feet and is waiting for a standard rig. No. 20 is a rig. Simms Oil Co.'s No. 6 Murphy, Section 28-15-15, is drilling at 2,045 feet. Sun Oil Co.'s No. 7 Hardin, Section 27-15-16, has 500 feet of oil in the hole from sand at 2,245-63 feet and is waiting for a standard rig. A. M. Sutton's No. 2 School House, Section 28-15-16, is drilling at 2,440 feet. Eight and one-quarter inch casing is being set at 1,950 feet at Woodley Petroleum Co.'s No. 3 Berg, Section 32-15-15.

Columbia County

Six-inch casing was cemented at 2,150 feet at Crosby and associates' No. 5 Womack, Section 1-16-20. Gulf Refining Co.'s No. 1 Huggins, Section 31-17-22, is drilling at 1,900 feet. Kentucky-Arkansas Petroleum Co.'s No. 1 Peter Doss, Section 29-19-20, was dry at 2,600 feet and is to be drilled deeper. Magnolia Petroleum Co. is waiting for 6-inch casing to set at 2,175 feet at No. 1 Sawyer, Section 1-16-20.

Nevada County

Six-inch casing was cemented at 1,162 feet, total depth 1,200 feet, at Fruen and associates' No. 1 Fuller, Section 6-13-21. Humble Oil & Refining Co 's No. 1 Bodcau, Section 9-15-22, is drilling broken lime and shale at 3,167 feet. Humble Oil & Refining Co.'s No. 1 Womack, Section 16-14-21, tested fresh water with a show of oil at 1,248 feet and is shut down for orders. Ten-inch was cemented at 42 feet and Advance Oil Co.'s No. 1 McKinney, Section 9-14-21, is drilling at 500 feet. A derrick is up for Zing and associates' No. 2 McKinney, 150 feet south and east NW cor. NW SW, Section 10-14-21.

OIL AND GAS IN TWO MORE WELLS IN MALJAMAR FIELD, NEW MEXICO

By Special Correspondent

ARTESIA, N. Mex., Nov. 6.—Oil and gas have been encountered in two more wells in the Maljamar Field, Lea County. The Ohio Oil Co.'s No. 1 on the William Mitchell permit in the NW Section 18-17-32, should be the next completion, the hole being 3,500 feet. This test has encountered numerous showings of oil and is making approximately 1,000,000 feet of gas. The well is expected to produce from the same fold as the Skelly Oil Co.'s No. 1 Lynch, both logs checking closely.

Offsetting the Maljamar discovery well to the north, the No. 1 State Lease well of the Maljamar Oil & Gas Corp. is showing both oil and gas, with the hole down 3,000 feet.

Additional water has been encountered in the Inglefield. Bridges test in Section 4-17-34, at 1,515 feet. The crew is underreaming the 10-inch casing, set at 1,450 feet. In Section 34-17-33, Henderson, Dexter & Blair have their No 1 down 1,350 feet, with the hole caving slightly.

No definite date has been set for the drilling to completion of the Skelly Oil Co.'s producer on the Lynch permit in Section 22-17-31, although operations are expected to start the coming week. To the north of the Skelly well, the Prairie Oil & Gas Co. is rigging up on No. 1 Keel.

To the west of the Maljamar Field, Wooley, Jones have spudded in their No. 1 on the McIntyre permit in the C SW Section 21-17-30. The No. 1 well of this company on the Beeson permit is shut down for repairs.

Artesia Field

In the Artesia Field, the Pueblo Oil Co. has made an offset to its No. 1 producer, in the SE cor. NW, Section 33-17-28. No. 1 continues to flow at the rate of 75 bbls. daily.

Flynn, Welch & Yates are shooting the upper pay in their No. 54 in the SE of Section 29-18-28, from a depth of 1,988 to 2,005 feet. This well is also producing from the lower pay sands.

The Empire company has a 35-bbl. producer in No. 2 on state acreage in the NW of Section 2-18-27, this coming from the 1,600-foot sands.

Drilling has been resumed on the Buffalo Roswell well in Section 25-11-27, near the town of Roswell. This well was started in 1921, the present depth being 3,800 feet.

The Marland Oil Co. of Denver will drill a well in southeastern New Mexico, with the probable location in Township 22s, Range 29e. A large structure, it is understood, has been worked out by its geological department, which for the past eight months has had 20 men in this territory, planetabling southern Eddy and Lea Counties. The structure to be drilled has been checked from both areal and subsurface standpoints and the drilling of the well will be closely watched.

Considerable interest is being shown in the Sun Oil Co.'s test in Section 21-25-30, which picked up a showing of oil and gas at a depth of 3,680 feet. The bottom of the salt in this test was 3,490 feet, the top having been encountered at 1,280 feet. The elevation of the Sun well is 3,218 feet.

Drilling Report
Eddy County

Compton's No. 2 Mann permit, Section 3-18-27, on production; Danciger Oil & Refining Co.'s No. 3 Beeson, SW Section 17-18-28, on production; Empire Oil &

(Continued on Page 122)

INDEPENDENTS LEARN IT IS MIGHTY HARD TO GET AHEAD OF THE MAJORS

By James H. Dameron

SHREVEPORT, La., Nov. 8.—Lighting wet matches on a windy day or figuring Congress' next move to shape the destiny of the petroleum industry is a comparatively easy pastime to the task of shaking the majors of the industry from their pinnacles. Yet there are some independents who are imbued with a strain of persistency to accomplish that feat.

Lee Wilson, Wichita Falls, Tex., independent producer and widely known drilling contractor, is, to use the advertising phrase of a dentifrice manufacturer, one of the four out of five having that desire. By way of introduction Mr. Wilson is the same Mr. Wilson of Los Bogas, Mexico, fame who tamed the world's wildest wildcat well after all others had failed.

So the story runs in Shreveport oil circles Mr. Wilson had, during the past several weeks, made several broad statements in connection with his ability to propel a golf ball around any course to make an enviable score. And couched in those assertions was a challenge to F. Ray McGrew, president of the Standard Pipe Line Co., Shreveport, La., and M. O. Rife, superintendent of production in Louisiana and Arkansas for the Gulf Refining Co. All three are old-timers and made their entrance into the industry when it was in its swaddling clothes. Mr. Wilson is reported to have had exceptionally good reasons for wanting to have a hand in bringing about the defeat of those men in golf or any other sport.

Enter the Scotsman

After weeks of challenging a tilt between the majors and the independents was decided upon. Mr. Wilson was to bring another contractor to Shreveport for the foursome to be followed by a pitch tourney. Preceding the arrival of Mr. Wilson's party there were enough queries for bets to make the most optimistic golfer look in the woodpile for the Senegambian.

On arrival Mr. Wilson introduced a gentleman of Scotch lineage as a Mr. Dugan. Mr. Dugan was none other than Tommy Cochran, amateur golf champion of Texas for two years. However, Mr. Cochran qualified for the tourney because he is a contractor headquartering in Wichita Falls and therefore bets were still on.

Mr. Rife didn't believe the match was on the "up and up." He nevertheless was misguided by his own judgment. Mr. Rife has a faculty of judging a golfer's ability on the links by a rapid appraisal of the golfer's physiognomy. In his opinion Mr. Cochran was, at least, slightly better than a plus quantity. Past experience told him Mr. Wilson was by far a better drilling contractor than a golfer. Therefore, according to Mr. Rife's calculations, the odds were for the majors to win hands down.

At the end of the first nine holes, Mr. Rife painfully knew what sport editors had reference to when writing of an upset in dope in any sporting event. The independents did to the majors what old Grover Cleveland Alexander did to the Yanks in the recent world series. The score of the golf tourney is withheld because of the discouraging effect it might have on aspiring golfers.

Immediately after the golf tourney the majors went into conference to make bat-

(Continued on Page 126)

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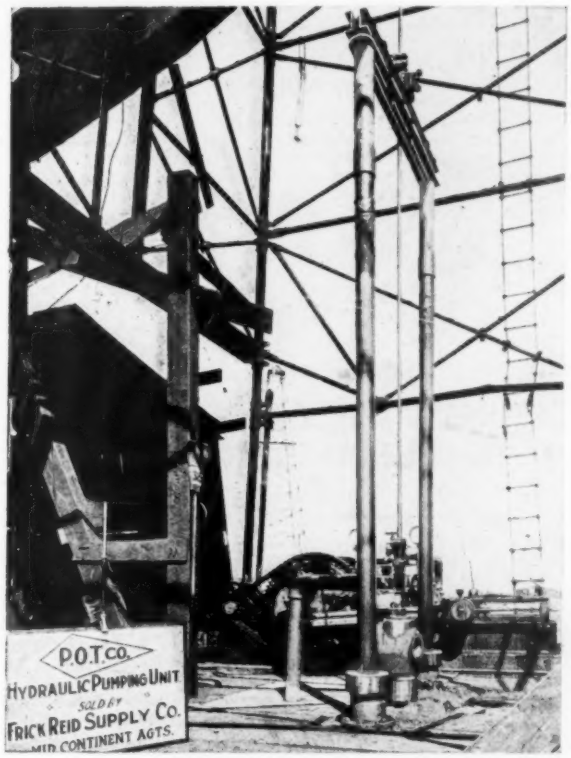

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Oil Showings in Three Alberta Tests

Found in Wells Drilling in Bow Island, Ribstone-Blackfoot and in Foothills West of Nanton

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ont., Nov. 6.—Within the past week oil showings have been reported in three tests being drilled by Imperial Oil, Ltd., in three different Alberta areas.

In the old Bow Island gas field, in southeastern Alberta, Imperial - Burdett No. 1, Section 8-11-11w4, oil showings have been encountered at three different levels, the last core taken at 2,912 feet making the best showing. The oil is a medium gravity crude, somewhat similar to the Kevin-Sunburst crude, but appears to be contained in a sand in the Kootenay formation, underlying the Dakota. At last reports, the crew was preparing to lower the 10-inch casing to the top of the last oil horizon cored, cement it, and then drill the well in for a production test. Imperial-Burdett No. 1 is about 5 miles northwest of the town of Burdett and some 40 miles west of Medicine Hat, on the south bank of the South Saskatchewan River. It is on top of the old Bow Island gas dome, and in the midst of the numerous gas wells, drilled there by the Canadian Western Natural Gas Co., which for many years supplied Calgary and Lethbridge. Imperial-Burdett was started last summer under an arrangement between Imperial Oil, Ltd., and the Canadian Western Natural Gas Co., as a deep test of the formations underlying the Bow Island gas sand. While the natural gas production was met between 1,950 and 2,250 feet in this field, the oil showings are approximately 800 feet lower than the regular gas sand. In drilling the rotary test below the gas sand, 3-inch cores were taken at various depths. The first oil showing was encountered at 2,888 feet. Coring was continued, and between 2,892 and 2,899 feet evidences of water were found in the cores. At 2,912 feet another core was taken showing oil in larger quantities, and a later core is reported to have given still better showings. Pending a definite capacity test after the well has been drilled some distance into the sand, it cannot be pronounced a commercial well, but the indications are favorable for commercial production.

The strike has directed attention to the oil possibilities of the dry gas domes in the so-called prairie areas some distance east of the Rocky Mountain foothills. In this area several important dry gas areas have been developed in the past 20 years, including the Bow Island, Medicine Hat, Viking, Foremost, Barnwell and Rogers-Imperial Fields, as well as the related Irma-Wainwright oil and gas field. These fields are all on structures subsidiary to the main general uplift through the central plains, and are supposed to represent northerly extensions of the structures of Wyoming and Montana, in which, however, the oil sands are more deeply buried. Practically all the territory close in to Imperial-Burdett No. 1 is held by the Canadian Western Natural Gas Co., Imperial Oil, Ltd., and the Canadian Pacific Railway, and there has been extensive filing on outlying areas since the strike was reported.

Ribstone-Blackfoot Showing

On the Ribstone-Blackfoot anticline, east of the Irma-Wainwright Field, Imperial-Ribstone No. 1, Section 5-45-1w4, has reported strong showings of oil in cores taken between 1,880 and 1,887 feet. This is a rotary test, in which a core barrel was used after the top of the supposed sand was reached. The test is a short distance west of the Alberta-Saskatchewan boundary line, and about 30 miles south and a little west of the town of Lloydminster, Sask. Unlike the Imperial-Burdett, which got its showing in the Kootenay formation, the Imperial-Ribstone showing seems to be in the Dakota sand. No official statement as to the extent or importance of the Imperial-Ribstone showing has yet been made public by Imperial Oil, Ltd.

In the same area, two other tests are under way. Ribstone Oils, Ltd., LSD 1, Section 1-46-1w4, is reported drilling below 300 feet. Advance Oil Co. No. 3, LSD 1, Section 16-45-1w4, which spudded in some time ago, has been held up by drilling difficulties. A number of locations have been made in the Ribstone area during the past summer, but little or no work has been done on any of them. Glenbow Oils, Ltd., has a test spotted in the west half of Section 24-44-2w4. Oil Producers Corp. made a location some time ago in Section 14-44-2w4, but no work has been done pending completion of wells in the Montana Field. Oxville Oil & Gas Co. of Oxville, Sask., has a location in Section 10-45-2w4. Pinnacle Oils, Ltd., of Calgary has a test spotted in LSD 12, Section 1-46-1w4. Ribstone Petroleums, Ltd., has a location in Section 10-43-3w4, toward the western end of the field. Ribstone-Wainwright Oils, Ltd., has No. 1 location in Section 29-43-2w4. The same company has acreage on the Saskatchewan end of the structure, and is reported to be moving drilling equipment to a second location, 4 miles north of Readlyn, Sask.

In the southern Alberta foothills west of Nanton, Imperial Oil, Ltd , Rice Creek No. 1, Section 4-14-2w5, at 5,685 feet got a small showing of light gravity oil, bailing about a barrel. At last reports the well was at 5,710 feet and drilling, with no appreciable increase in production. The well is on a narrow fold running north and south and approximately the same distance east of the Rockies as the Turner Valley Field. A previous test by Imperial Oil, Ltd., on Willow Creek crossed a fault, going back into the Benton formation, and was abandoned. Imperial-Rice Creek is the second deepest test in Canada and is drilling open hole for the 6½-inch casing which at last reports had been carried down to 4,704 feet.

Turner Valley

In the Turner Valley Field southwest of Calgary, Vulcan Oils No. 1, LSD 11, Section 13-20-3w5, is at 4,967 feet and drilling, with a reported gas flow of over 3,000,000 feet a day, and fair showings of light oil. Illinois-Alberta Oil & Refining Co. diamond drill test, LSD 14, Section 12-20-3w5, which at 3,811 feet has the tools frozen in the hole, is backing off stem, preparatory to using a set of reaming tools to penetrate the ice and release the drilling tools. McLeod Oil Co. No. 2, LSD 16, Section 1-20-3w5, is at 3,772 feet and trying to drill around the lost tools to get a grip on them. Great West Oil Co. No. 1 SE Section 7-20-2w5, is at 5,160 feet with 8¼-inch casing run to 5,090 feet. Casing will be carried down through the present caving formation. The test has some gas flow from the bottom of the hole.

Royalite Oil Co., Ltd., the Imperial Oil, Ltd., subsidiary operating in the Turner Valley Field, has declared a dividend of 25 cents a share, payable November 25 to shareholders of record November 1. This is the first dividend paid by the Royalite since its organization some years ago. The company was organized jointly by Imperial Oil, Ltd., and Calgary Petroleum Products, Ltd., to take over the Dingman interests in the Turner Valley Field. Calgary Petroleum Products, Ltd., was a reorganization of the original Calgary Petroleum Products Co., the pioneer company in the field. In connection with the present dividend and the company's operations, R. B. Bennett, a director of the company, has given out the following statement:

Royalite Statement

"The directors of Royalite Oil Co., Ltd., met at 12 o'clock today (October 27) and declared a dividend of 25 cents per share, which is the equivalent of $2.50 per share on the original shares of the company, payable on November 25, next to shareholders of record at the close of business on November 1.

"The drilling operations of the company in Turner Valley have been delayed by loss of tools in well No. 5 and casing difficulties in well No. 6. At very great expense, the company installed two rotary rigs of the latest design, and commenced drilling operations at what are known as wells Nos. 5 and 6.

"Rotary rigs have been used very successfully in Peru, California, Colombia, Persia and many other oil fields of the world, and it was believed by many competent authorities that they would operate successfully in the Turner Valley area. Unfortunately, while very successful for the first 2,000 feet, it has been increasingly difficult to operate them successfully since passing that depth. Notwithstanding these difficulties, No. 5 well has now been drilled to a depth of over 3,000 feet. The best available expert is now in the field studying conditions and determining what action will be taken for the solution of the difficulties in connection with drilling operations at these wells."

The Royalite dividend has been earned largely by the production of Royalite No. 4 naphtha gusher, which is making about 500 bbls. a day crude naphtha, with approximately 18,000,000 feet of gas. The Royalite is reported to hold 51 per cent of the stock of the Dalhousie Oil Co., which early this year took over the assets of the Southern Alberta group of companies, and is now deepening old Southern Alberta No. 1 producer and drilling a second test. In a further interview, Mr. Bennett discussed the general situation in the Turner Valley Field as follows:

Turner Valley Drilling

"There are approximately 35 strings of drilling tools operating in the Turner Valley. Of these the Royalite and Dalhousie companies are operating five. No

(Continued on Page 122)

SIXTEEN NEW WELLS ARE LOCATED IN THE PONDERA VALLEY FIELD

By Frank B. Taylor
Staff Correspondent, Rocky Mountain Area

CASPER, Wyo., Oct. 6.—The Pondera Valley Oil Co.'s test on Section 17-34-2, which found gas in the Devonian as reported last week, is shut in and waiting on orders from the firm's headquarters. The depth is corrected to 3,085 feet. There is no sign of the gas flow diminishing.

New work is starting all over the field, 16 new wells have been located and most of these have started building rigs or moving in heavy drilling machines. In ordinary seasons the work at this time of the year is settling down to zero on the approach of cold weather.

The Texas & Pacific Coal & Oil Co. has a producer good for 500 bbls. This is known as the Homestake Exploration Co. and is inside the defined limits of the field. The California Petroleum Co. found a good well on the Lashbaugh lease that is expected to make 400 bbls. from the Ellis sand, and the Rice interests well on the Stannard lease, reported in last week, is holding up around 1,000 bbls. production.

In central Montana, near Winifred, on what is known as the Fenholt structure, a local syndicate is drilling a wildcat and is now at 1,150 feet with the strata showing that the hole is about 200 feet above the first Kootenai sand at Cat Creek.

The Record Petroleum Co. in the Lake Basin Field has its well on Section 24-1-21 in the Frontier sand and more gas showing. This well is expected to make about 25,000,000 feet when completed. The Linco Oil Co. has a well at 2,700 feet on Section 25-1-21 in the same field.

The Kalispell Petroleum Co. will drill three wildcats on the east side of Liberty County and north of Joplin. These three tests are to determine whether a second structure lies to the east of the Sunburst Field after allowing an interval of about 40 miles for the synclinal valley. These wells will be about 40 miles from the Sunburst Field and will drill through the Madison lime if no production is found above.

Near Denton, in Fergus County, on the Albee ranch, the Claggett Oil Co. has a wildcat down to 300 feet and is making hole fast. This location is on the Missouri River north of Lewistown, and the Kootenai sands, expected about 2,000 feet, are the objective.

Colorado Operations

In the Rangeley Field in Colorado, the Associated Oil Co. has landed the 10-inch casing at 3,000 feet, and the well is waiting for cement to set. The Midwest Refining Co. lost two joints of pipe at 2,900 feet in the test this company is drilling and will have to clear the hole before drilling further. The Texas Company's well in Rangeley is still having trouble with a bad fishing job.

On the Iles Dome, Moffat County, the Marland Oil Co.'s well on the Taylor permit has water in the Frontier sand and has cemented off and will drill down to the Dakota. On the Garmesa Dome, the Gypsy Oil Co.'s gas show has proven to be useless after an analysis, as the gas is found to be inert and of no use for domestic fuel purposes.

Cane Creek Flow

The Cane Creek discovery well on the Colorado River below Moab, Utah, was considered as having passed all producing horizons, but at 4,960 feet the drill opened a new sand in the salt, and the well made a flow estimated at 100 bbls., and the showing is thought to be good for 500 bbls. daily. The John Shaffer well, about 5 miles south of the discovery well, is at 2,480 feet and expects a pay sand at any time.

Salt Creek Production

In the Salt Creek Field of Wyoming, the Midwest Refining Co. completed three new producers. The Salt Creek Consolidated Oil Co. on Section 31-40-78 has a well in the second Wall Creek at 2,438 feet that will make 80 bbls. The Wyoming Oil Fields Oil Co. will have a nominal pumper on Section 25-40-79 at 1,540

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Brown Recorders

Huntington Beach Peak This Month

Just a Possibility Deeper Production May Delay It a Little. Initial Output Becoming Smaller

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Nov. 6.—Resulting from the aggressive development work in the southwest extension of the Huntington Beach Field, operators in that area finished several additional new wells during the past week and will undoubtedly complete six or eight more during the next four or five days. It is problematical just how high the production peak will go, but the area under development is expected to reach the high point along about the middle of November. Some indications of an early decline are already evident, and, while most of the new wells finished were excellent producers, the initial output as a whole was somewhat smaller than that registered by completions finished heretofore. While new wells brought in from now on are expected to show a smaller initial output, this decrease in individual production may be offset to some extent by a larger number of completions. A check made a day or two ago showed something like 30 drillers nearing the 4,000-foot level, from which point they will probably be given tests. Most of these wells should come into production within three weeks.

George F. Getty carried off completion honors by bringing in two new wells in the southwest extension, although one was unusually small and somewhat of a disappointment. This was No. 8 Huntington, pumping 160 bbls. of 25.1 gravity oil daily from 3,786 feet. Getty's No. 9 Huntington, however, was a very favorable completion as it registered an initial of 1,460 bbls. from 3,900 feet, the hole being finished with a 6¼-inch oil string including 525 feet of 100-mesh screen. The Julian Petroleum finished drilling No. 1 Lambert, but it was not actually put on a production test. This well, together with No. 1 Stein and No. 1 Davis, should be tanking oil within a short time.

The Richfield Oil Co. successfully finished No. 2 McKeon and got a 740-bbl. well, the oil testing 24.2 degrees and showing a cut of 3 per cent cent. It was drilled to 3,950 feet and finished with a 6¼-inch oil string carrying 675 feet of 100-mesh screen. The Ambassador Petroleum's No. 9 Huntington started off at a good rate, but declined the following day to 450 bbls., the oil testing 23.6 degrees and showing a cut of 4 per cent. The company reports the completion depth at 3,934 feet, a 6¼-inch oil string being used to finish the hole.

Deeper Test

The Petroleum Securities is running pipe in four drillers, all of which should, barring the development of mechanical trouble, be tanking oil within a few days. The company's most interesting well is No. 1 Lambert, important because it is scheduled for production at 4,200 feet, somewhat deeper than most operators have been going. Very few wells in the extension have been carried below 4 000 feet, while a large number have been placed on production above this point.

The Petroleum Securities' No. 1 Lambert might be instrumental in opening up another 200 feet of sand, in which event the fields production peak might be delayed a week or so. Hogan & Lytle lost very little time in spudding in their No. 2 after finishing No. 1 Huntington. The derrick for No. 2 had been erected previous to the completion of No. 1 and the crew was immediately shifted over to the new hole and spud made.

Probably the most remarkable feature in connection with the development of the southwest extension is the high quality of the gas which these new wells are producing. Due to the rapidity with which wells are coming in it is nearly impossible to venture an opinion as to the present production of gas, but it is believed the average per well is around 1,000,000 feet. The saturation of this gas varies somewhat, but is averaging approximately three gallons of casinghead per thousand feet of gas treated. Some of it runs as low as one gallon per thousand feet, but offsetting this several tests have shown wells to be yielding a gas averaging as high as four gallons. This is perhaps the highest natural gas gasoline recovery anywhere in the state.

The California Petroleum finished one well in the southwest extension and is landing 8¼-inch oil strings in two more, No. 1 Tubach and No. 1 Schwartz. The company's successful completion was No. 1 Sandburg, which came in flowing 610 bbls. of 25.1 gravity oil daily from 4,039 feet, the hole being finished with an 8¼-inch oil string carrying 750 feet of 100-mesh screen. The Standard, the largest operator in the extension, is running 21 strings of tools and should finish five or six wells within 15 days. The company recently spudded in both Nos. 1 and 2 on the Pacific Electric lease, but will increase work on this property soon as rigs are going up for Nos. 3 and 4. The Superior has two or three wells nearing completion and will probably follow these up later as several others have just passed the 3,000-foot level. The United and Wilshire Oil companies have two wells each scheduled to be cemented tomorrow preliminary to early production tests.

Ventura

The Shell finished its big second well in the Ventura Avenue Field in as many weeks when No. 7 Edison was turned loose a few days ago from 6,105 feet. It registered an initial of 3,200 bbls. daily, the oil testing 29.8 degrees and showing a cut of 1 per cent. In the week just previous the Shell successfully finished No. 14 Taylor, which came in flowing 3,500 bbls. daily from 6,413 feet. These two wells boosted the Shell's daily production 6,700 bbls. and, judging by the present status of several others on the Edison and Gosnell leases, the company should chalk up a further increase within 30 days.

The deep tests of the Shell and Associated started a few weeks ago in an effort to determine definitely the thickness of the formation in the Ventura Avenue Field will undoubtedly be the center of attraction during the next several months as not a single well drilled in the field up to the present has gone entirely through the oil zone. Little by little the wells have been carried deeper and nearly each succeeding month sees a new record established for depth. The Associated and Shell decided several weeks ago to ascertain definitely the depth of the producing horizon in this field and it is understood the wells will be given close attention. The Shell selected No. 23 Gosnell, east of the Ventura highway, as its deep test, while the Associated chose No. 37 Lloyd, about 1,000 feet to the east and 250 up the hillside. Both wells were started with unusually large holes to eliminate the possibility of the hole pinching out. Instead of landing 11-inch at 3,000 feet, as has been the common practice, the Shell and Associated will set 15-inch pipe at that depth in their respective tests. This will be the longest string of 15-inch pipe ever placed in a California well and it might not be amiss to call attention that it is the present intention to land 11-inch casing somewhere around 4,500 feet, which is in itself quite an undertaking.

Several months ago in The Oil and Gas Journal it was stated that production might be anticipated down to around 7,000 feet and possibly deeper. With wells now coming in from the 6,400-foot level that 7,000 feet does not look very deep, but when the original prediction was made wells had not yet been drilled below 6,000 feet. Some are now inclined to believe production may be secured even below 7,000 feet, and for this reason it would be interesting to watch the outcome of the Associated's No. 37 Lloyd and the Shell's No. 23 Gosnell, both of which have just turned 3,100 feet. The Ventura Avenue Field holds all records for thickness of producing formations, having surpassed Long Beach some time ago.

Bids on State Leases

The special commission appointed by the Governor of California to receive bids for the leasing of state property in the northern part of the Ventura Avenue Field will probably announce its decision soon as the bids were officially opened this morning. The property is the State School for Girls and, while no estimate can be advanced as to how high the bidding will go, it is believed the cash bonus will be at least $100,000. The royalty as fixed by the state is based on a graduating scale, beginning at 12½ per cent on all wells under 250 bbls. daily and running up to a maximum of 20 per cent. The property will require 6,000 feet of hole for production and these deep wells will probably run somewhere in the neighborhood of $200,000 each.

It is believed at least 10 wells will be finished in the Ventura Avenue Field between now and the close of the year and, while this new production will be distributed among several operators, the General Petroleum and Associated should receive a substantial part. The Bolsa Chica Oil Co., whose No. 1 has just passed the 5,930-foot level, should also be responsible for a part of the increase expected to be registered during the next 60 days. Walter P. Temple has taken a lease on 24 acres adjoining G. J. Magenheimer's Hartman lease and it is understood material will be on ground for the first rig within 10 days. Temple has also

(Continued on Page 121)

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, Well, Location—	S-T-R	Depth	Status
Marine, No. 1 Strong, Bellflower	24- 3-12	5,842	abandoning
Feather. & Preston, No. 1 Blinn, Clearwater	16- 3-12	4,185	abondoning
Smith Pet. Co., No. 1 Johnson, Hawthorne	17- 3-14	5,285	gr. sd. drilling
Associated, No. 1 Cypress, Inglewood	34- 2-14	4,345	gr. sd. drilling
Dominguez Exten., No. 1 Compton, Domingues	22- 3-13	2,800	gr. sd. drilling
Riner, H. E., No. 3 McDermott, San Bernardino	32- 2- 8	620	suspended
Milham Explto., Well No. 2, Del Rey	34- 2-15	6,100	fishing
Cardiff Oil Co., No. 1 Oceanside, San Diego	24-13- 4	1,115	hd. sd. drilling
Petroleum Sec., No. 1 Sesnor, San Fernando	14- 2-16	4,700	hd. sd. drilling
Standard, No. 1 University, San Fernando	15- 2-15	4,760	hd. sd. drilling
Standard, No. 1 Austin, Topango	11- 1-17	1,729	running 12½-in.
Union, No. 1 Saugus, Saugus	15- 4-16	4,702	brown shale
Oceanside Oil Co., No. 1 Pacific, San Diego	23-11- 5	3,126	cleaning out
Halfhill Packing Co., No. 2 Jeffries, Burbank	2- 1-15	1,250	suspended
Sou. Calif., Drlf. Co., No. 1 Matteson, El Segundo	1- 3-15	2,100	sd. sh. drilling
Calif. Pet. Dev., No. 1 Spitz, Capistrano	2- 8- 8	2,700	sd. sh. drilling
Petroleum Sec., No. 1 DeBaker, Bandini	18- 2-12	2,720	gr. sd. drilling
Van Nuys, No. 1 Community, Van Nuys	16- 1-15	3,872	cleaning out
Julian, No. 1 Moser, Athens	12- 3-14	3,730	hd. sd. drilling
General Pet., No. 1 Lomita, Sunset Beach	19- 5-11	Rig	rigging up
Johnson, Geo. W., No. 1 Wickham, Los Angeles Co.	32- 5-17	Rig	rigging up
Rider, E. R., No. 1 El Segundo, Los Angeles Co.	12- 3-15	2,300	testing

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Taylor, W. W., No. 1 Clovis, Fresno County	5-13-22	1,670	sl. oil show
Associated, No. 2 Huron, Fresno County	20-19-17	2,060	fishing
Federal Explto., No. 1 Kinsella, Tulare Co.	15-22-24	3,980	br. sh. drilling
Bolsa Chica, Well No. 2, Kettleman Hills	30-23-19	2,360	recemented
General Pet., Well No. 1, Kettleman Hills	....	....	location
Marland, No. 1 Elliott, Kettleman Hills	12-22-17	5,679	fishing
South Coalinga, Well No. 1, Kettleman Hills	35-24-19	1,480	bl. sh. drilling
Shell, No. 1 Berlywood, Moorpark	32- 3-20	6,667	hd. sh. drilling
C. C. M. O., No. 1 Hobson, Ventura Co.	22- 3-24	5,855	sidetracking
Milham Explto., No. 1 Sexton, Ventura Co.	19- 3-22	6,219	fishing
Milham Explto., No. 1 Buttonwillow, Kern Co.	8-28-23	3,017	set pipe
Standard, No. 1 Palmer, Santa Barbara Co.	13- 9-23	4,156	hd. sd. drilling
Standard, No. 1 Carmarillo, Ventura Co.	29- 2-20	3,760	basalt drilling
Pan American, No. 1 White, Monterey Co.	27-23-12	2,718	hd. sd. drilling
Pyramid, No. 1 Trescony, Monterey Co.	26-21- 9	3,155	sd. drilling
Shell, No. 1 Murphy, Petaluma	29- 5- 6	3,210	hd. sd. drilling
Miley Explto., No. 2 Casitas, Ventura Co.	7- 3-25	623	fishing
Miley Explto., No. 1 Goleta, Santa Barbara Co.	3- 4-29	660	sd. drilling
Rio Grande, No. 1 Canet, Ventura Co.	9- 3-23	3,150	br. sh. drilling
Woodward & Sheedy, No. 1 Famosa, Kern Co.	27-27-26	3,502	suspended
Henderson Pet., No. 2 Piru, Ventura Co.	33- 5-18	1,274	sd. sh. drilling
Ozena, No. 1 Allensworth, Tulare Co.	26-24-24	600	hd. sh. drilling
Union, No. 1 Gill, Famosa	8-28-27	2,300	hd. sh. drilling
Parkford, E. A., No. 1 Strathern, Ventura Co.	....	878	bl. sh. drilling
Star Petroleum, No. 1 Canet, Ventura Co.	13- 3-23	180	sd. drilling
Associated, No. 2 Kerman, Fresno Co.	36-13-16	Rig	rigging up
Oil Exploration Co., No. 1 Janes, Ventura Co.	....	315	gr. sd. drilling
Walkiln Pet., Well No. 1, San Luis Obispo Co.	33-27-10	2,455	br. sh. drilling
Walkin, Pet., Well No. 1, Tulare Co.	35-24-24	Rig	rigging up

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total This week	Daily Average	Total Last week	Daily Average	This year To date	Same time Last year
Crude oil	166,414	23,773	152,761	21,823	9,803,709	12,027,035
Fuel and gas oil	75,240	10,763	366,557	52,365	9,059,815	462,718
Gasoline	261,790	37,399	.....	.....	5,984,848	6,967,495
Tops	.....	.....	.....	.....	227,566	648,779
Coastwise—						
Crude oil	427,647	61,092	261,198	37,314	19,401,041	27,971,840
Fuel and gas oil	275,431	39,347	229,705	32,815	9,324,195	9,679,885
Gasoline	110,380	15,769	200,298	28,614	6,335,947	4,424,994
Kerosene	6,044	863	10,363	1,480	216,296	264,270
Tops	.....	.....	.....	.....	645,226	164,823
Exports—						
Crude oil	21,271	3,039	.....	.....	4,676,839	2,200,837
Fuel and gas oil	38,611	6,944	113,838	16,263	3,811,309	3,563,789
Gasoline	146,634	20,948	225,785	32,255	4,645,855	3,351,457
Tops	.....	.....	.....	.....	167,581	170,407
Kerosene	96,478	13,783	72,833	10,405	2,359,339	2,257,502

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC, GULF COAST PORTS

Fuel and gas oil	168,212	24,030	.....	.....	1,727,996	218,414
Gasoline	.....	.....	.....	.....	758,222	1,111,108
Tops	.....	.....	.....	.....	229,775	794,918
Lubricants	.....	.....	.....	.....	335,228	317,558
Coastwise—						
Fuel and gas oil	38,611	6,944	113,838	16,263	3,811,309	3,563,789
Gasoline	76,383	10,912	68,418	9,774	3,747,494	2,055,712
Kerosene	.....	.....	.....	.....	298,705	145,776
Exports—						
Fuel and gas oil	139,934	19,991	65,982	9,426	3,141,561	2,507,414
Gasoline	.....	.....	.....	.....	1,379,490	537,770
Kerosene	.....	.....	185,610	26,516	1,727,474	976,571
Lubricants	.....	.....	.....	.....	8,759	243,429

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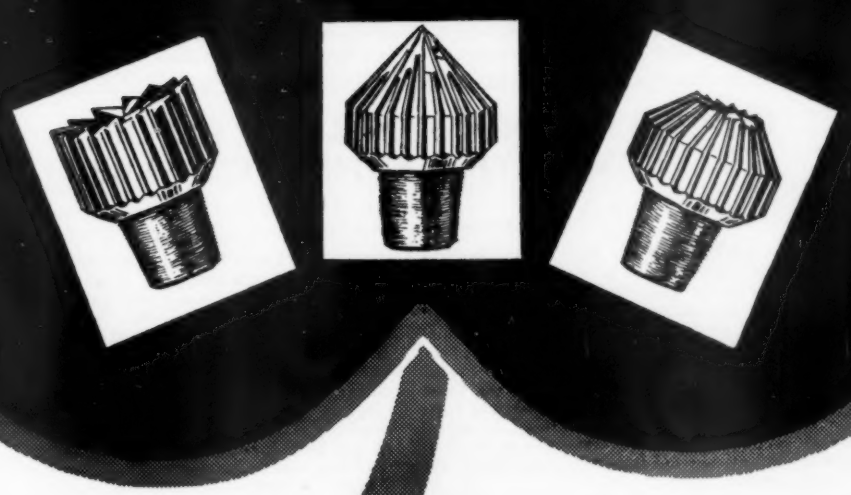

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HOUSTON LOS ANGELES

Deeper Drilling in the Old Lima Field

Wood County, Ohio, Reports 70-Bbl. Well and Darke County Springs Surprise With 90-Bbl. Producer

By Whit
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Nov. 6.—A few days of sunshine and the passing of heavy continuous downpour of rain, makes a vast difference in development work in the Central West Field, which is more noticeable in the central Ohio area, as the gas companies are trying hard to open up new gas fields and oil fields as well. Operators are anxious to begin work on new leases as well as on old ones and carry out their plans made early in the fall for an extensive drilling campaign. Should the fair weather continue there will no doubt be a rush of the drill. Deeper drilling into the sand is the slogan of the Lima Field and in some cases wells above the average are found. One of these deep sand wells were found during the week just a short distance out of Cygnet, in Bloom Township, Wood County, producing 70 bbls. naturally. There are still at least two or three pays below the one in which this well secured its good production.

The bringing in of a 90-bbl. producer by the Cole Oil & Gas Co. in its No. 15 well, on the Discher lease, in Mississinewa Township, Darke County, came in as a surprise as nothing of that size was expected. This well got its oil at 41 feet in the Trenton, and is in a field that has been opened within the past few years.

The week was not a very prosperous one for the Allendale Field, in Wabash County, Illinois, for there were seven completions and all proved dry holes, not one producing well having been brought in.

Central Ohio had a wonderful week with a large list of completions with an array of good wells, many dry holes and a few oil producers of moderate production. Indiana had a few small producers, but shows an increase in new work starting and should show an improvement over October.

Lima Field

With better weather conditions the old Lima Field of northwestern Ohio shows a nice improvement and if it continues will bring out a lot of new development work in all producing sections as well as in advance of production. A remarkably nice deep sand producer has been added to the old Wood County Field, in Helena L. Hughes' No. 5 on the R. A. Hughes farm, on the oil map as the J. Katzmyer farm, just south of Cygnet, in Section 7, Bloom Township. This well is located 1,000 feet from the south and east lines of the farm, and struck top of the Trenton sand at 1,153 feet. The drill penetrated the sand 245 feet to a total depth of 1,398 feet, where the well made 70 bbls. naturally the first 24 hours. This well is on what is known as the "Hog's Back or Sucker Rod Belt," that produced so many large producers in the early days of the field, more than 30 years ago. This is the second good well on this lease during the past couple of months and other wells will be drilled to the lower pay in the Trenton.

The Oko Oil & Gas Co. is keeping busy developing a large acreage in the southwestern part of Perrysburg Township, Wood County, several miles south of Perrysburg, and a couple of miles east from the Dixie Highway. This company's No. 10 well, 135 feet from the north line and 850 feet from the east line of the George Deverna farm, in the SE of Section 29, struck top of sand at 1,243 feet and sent the drill 41 feet in the sand, showing an initial of 30 bbls. Same company's No. 5 well, 45 feet from the south line and 960 feet from the east line of the George Limmer farm, in the SW, Section 28, pumped 12 bbls. initially, with the sand topped at 1,238 feet and drilled 55 feet in. Same company is working at a test on the George Dauer farm, Section 32, which is looked upon as a wildcat, being some distance in advance of its producing wells, and starting No. 6 on the Louisa Devena farm, Section 29. In Liberty Township, the Ohio Oil Co. abandoned No. 11 on the Royal B. Mercer farm, Section 11, and in Henry Township, abandoned No. 10 on the John Marshall farm, Section 15.

In Liberty Township, Mercer County, the Celina Petroleum Co.'s No. 3 in the northwest corner of the M. A. Linn farm, in the SW of Section 9, pumped 15 bbls. Top of the sand at 1,089 feet and drilled 21 feet in the sand.

Southeast of Toledo, in Oregon Township, Lucas County, John Welton's test, 650 feet from the south line and 250 feet from the west line of the Henry Vilhauer farm, in the SE of Section 12, pumped 3 bbls.. Trenton sand was found at 1,301 feet and drilled 71 feet in the sand.

In Mississinewa Township, Darke County, the Cole Oil & Gas Co. made a nice strike at its No. 15 well, 1,000 feet from the north line and 300 feet from the west line of the W. C. Discher farm, in the NW of Section 11, where the top of the sand was found at 1,223 feet and drilled 41 feet in, showing a first 24 hours' production of 90 bbls.

About 1¾ miles southeast of the town of Forest, on the Pennsylvania and C. C. C. and St. Louis Railroads, and in the northeast corner of Hardin County, between Dunkirk and Upper Sandusky, W. F. Kurtz drilled a gas well on his farm, in Jackson Township, Hardin County, that had such a gas pressure it required 72 hours to shut it in. This is near the old Patterson Gas Field that produced gas 35 years ago. The finding of this well will no doubt bring about a more active drilling campaign there, as little drilling has been done in that part of Hardin County for many years.

In Liberty Township, Hancock County, A. P. Byall is drilling a second well on the Bower & Co. property, Section 24. In Harris Township, Ottawa County, the Babione Oil Co. is drilling No. 6 Henry Neeb farm, Section 15, and the Burman Oil Co. is drilling No. 1 on the Gust Magsig farm, Section 23, same township.

Indiana

In the old Trenton Rock area of the east central portion of Indiana a few completions are reported. In Bear Creek Township, Jay County, the Southern Oil Co.'s No. 9, on the Harry Armontrout farm No. 1, in Section 10, is reported good for 20 bbls. initial, while the Central West Oil & Gas Co.'s No. 3 on the Bone farm, same section, shows for 7 bbls. In Penn Township, same county, near Bryant, the Amber Oil Producing Co.'s No. 11 on the S. E. Davis farm, Section 21, pumped 15 bbls. initial, while in Green Township, a dry hole is reported on the Houck farm.

In the new Berne Field of Adams County, J. H. Harmon and others' No. 7, on the Mary J. Niblick farm, formerly known as the Studebaker farm, of 242 acres, Section 6, is good for 20 bbls., while George S. Lacknett's second well on the D. C. Boze 80 acres, Section 7, is a 10-bbl. pumper. Alvin C. Spindler, well known Pittsburgh operator, is drilling his second well and made a location for a third well on the 39 acres that he recently purchased in fee simple from R. T. Wilson, Section 7, same township. W. E. and C. H. McKelvey, also well known Pittsburgh operators, are due in with a second well on the William Bollenbacher farm, Section 6, started No. 3 same farm. J. H. Harmon and others have started No. 8 on the Mary J. Niblick farm, Section 5.

In Salamonie Township, Huntington County, the March Petroleum Co.'s No. 11 J. L. Priddy farm, Section 20, is a 2-bbl. pumper, while Wood and Canaday are drilling No. 8 on the W. D. Bonifield farm, Section 19, same township. In Monroe Township, Randolph County, Frank C. Bolich is drilling No. 3 on the R. B. Cockrill farm, Section 4. In Blue Creek Township, Adams County, Paul Schulte is drilling a test on the George Swank farm, Section 20.

In southwestern Indiana, in the new pool south of Washington, the county seat of Daviess County, the J. Cannival Oil Co.'s second well, 1,400 feet southwest of No. 1 on the W. A. Allison Son's land, Section 35, Veale Township, struck oil at 1,075 feet and the showing is for a good well. No. 1 is reported idle at this time, it also made a fair showing. After No. 2 is completed there is a possibility of having the two wells connected to pipeline. The Allison lease is in Section 26, south of the Geirger Pool. In the same section, Steve Myers and others were not as lucky as some, as their test in the northwest corner of the Anna Tisdale farm, in the SE of the section, is reported a duster at 1,080 feet.

In Monroe Township, Pike County, the Gem Oil Corp.'s No. 4 well, 225 feet from the north line and 660 feet from the west line of the George A. Taylore farm, in the SW of Section 9, struck top of sand at 1,300 feet and drilled 20 feet in the sand, the well producing 15 bbls. the first 24 hours.

In Washington Township, Gibson County, the Ohio Oil Co. abandoned No. 2 on the Minnie Jones farm, in Lot 116. Water broke in and the well was too small a pumper is the cause of pulling it out.

Illinois

Few completions were reported from the Illinois fields during the past week, the bulk of the work being done in Wabash County, which was pretty hard hit with dusters in different parts of the County, there being seven of them and no oil wells were reported. In Lick Prairie Township, Wabash County, 2 miles south and 5 miles west of the hamlet of Friendsville, and about the same distance from any known production, a well has been drilled in to a total depth of 1,800 feet and pronounced dry. This well is in the northeast corner of the Charles S. Groff farm, in the SE of the NW of Section 31, and was drilled by Miller, Lenfelsen and others. Seven miles south and 1 mile east of the dry hole on the Groff farm, Bell Brothers drilled a test in the northeast corner of the P. R. Fisher 221-acre farm, being the east half of the east half of Section 6 and over a mile to the southeast of the town of Bellmont, in Bellmont Township, Wabash County. This hole went to a total depth of 2,425 feet to test out any possibility of a pay sand below the present producing sands of the county, but it proved a duster. This Fisher well is 2½ miles south and slightly over a mile west from an old well drilled years ago on the S. S. Sciler farm, in the east half of the SW of Section 21, same township, which found

(Continued on Page 100)

HOPEWELL POOL, KENTUCKY, REPORTS COMPLETION ESTIMATED 150 BBLS.

By Whit
Staff Correspondent, Kentucky-Tennessee

OWENSBORO, Ky., Nov. 8.—The only well of note in the Kentucky Field during the past several days is No. 5 on the Brockman farm, in the Hopewell Pool, in the northern part of Cumberland County, estimated at 150 bbls. from the sand at around 250 feet. This pool looks like an important addition to the Cumberland County area and is destined to be an active one, as it has been connected with a pipeline to take the production. Many new locations have been staked for wells.

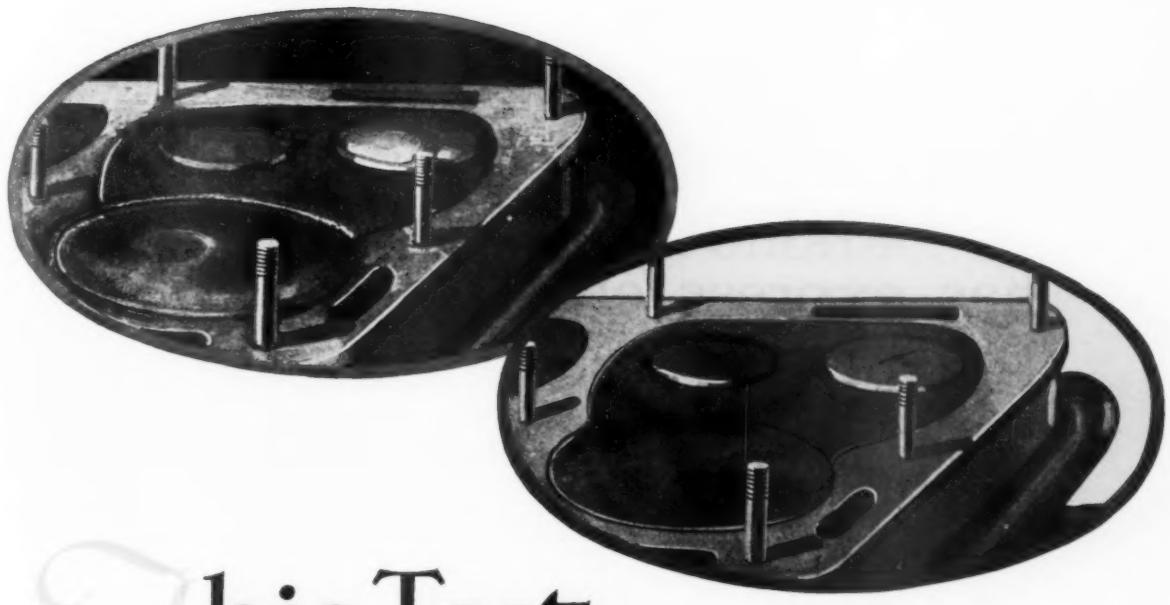
Completions in other areas of the Blue Grass State are only ordinary average sized producers, with a sprinkling of dry holes and a couple of gas wells. There is more work doing in the Owensboro Field than at any time in its history, and the Illinois Pipe Line Co. is connecting up all producing wells as rapidly as it can be done, not alone in the Owensboro Field, but in Warren and Allen Counties as well. With better weather conditions the Kentucky Field should show a nice increase during November, as operators are anxious to drill and get as many wells to producing as possible before the winter sets in.

Leases Purchased

The Louisville Gas & Electric Co. is making inroads in the gas producing regions of eastern Kentucky, in the way of securing acreage for future development for both gas and oil. Early in the year this company purchased leases on approximately 150,000 acres from the Elkhorn Coal Co., and recently purchased several additional blocks. Among the late purchases were about 50,000 acres from the Beaver Creek Consolidated Coal Co.; about 50,000 acres from the John C. Mayo estate; 100,000 acres from the Kentucky River Coal Corp., besides approximately 150,000 acres in smaller parcels. These holdings and those that are being sought by the Louisville company are located in Morgan, Leslie, Floyd, Knox, Breathitt, Letcher, Magoffin, Perry, Martin and Lawrence Counties. It is reported that the Louisville company now holds around 1,000,000 acres under lease in the eastern division of the State. Other gas companies are securing all the acreage possible to protect their interests, and this should bring forth a much heavier development over a large area within a short time. This is the largest acreage deal ever put over within the State, and will amount in dollars close to what the sale of the Union Gas & Oil Co. of its holdings in the North Weir Field of Lawrence-Johnson Counties was a year or so ago.

Dr. Willard Rouse Jillson, head of the State Geological Bureau, predicts that the next 10 years will witness the greatest development in the oil and natural gas territory Kentucky has ever witnessed. The main purpose of the Louisville company in making its large investment is primarily to secure an adequate supply of natural gas for its customers in Louisville, but if the field is anything like the estimate of the geologists, the supply will be far more than the local demand. Few people even in Owensboro have even a

(Continued on Page 97)



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Found by Hope Construction & Refining Co. in Berea Sand in Calhoun County Somewhat in Advance of Production

By D. S. Wakenight
Staff Correspondent, Eastern Fields

PITTSBURGH, Pa., Nov. 8.—A review of the eastern fields for the week just closed shows fewer completions and only a few better than the average. The southeastern Ohio fields had the greatest number and West Virginia one.

Fewer wells were completed in October than in September but the new production was almost 350 bbls. In excess of September. As a producer of gas, southeastern Ohio is coming to the front. During October these fields completed 26 gas wells, which was a greater number than at any time in its history. In all of the gas areas, development work is now increasing, preparatory to meeting the increased demand when the weather grows cold. At present the larger gas companies have a large amount of gas shut in.

The work under way and starting in the eastern fields is not centered in any field. It is widely distributed in the old fields. So many disappointments have been encountered during the year that operators have given up hope of finding any strictly new producing territory this year. Next year the search will be renewed, possibly with better results. It begins to look as if the Big Injun Sand Pool in Henry district, Clay County, West Virginia, is approaching the outer limits of its producing area. All of the late completions have come in light pumpers. The reports from all districts show that there were 48 fewer rigs and wells drilling at the close of October than at the close of September. This can be regarded as quite a sharp decline in new work.

No Large Wells Completed

The best well completed in southeast Ohio was Midland Oil Co.'s test on the E. H. Denny farm, in the northwest quarter of Section 18, Hopewell Township, Muskingum County, which produced 70 bbls. the first 24 hours. In Section 19, Prairie Township, Holmes County, the Pure Oil Co.'s second test on the J. Clark Smith farm is a 35-bbl. producer in the Clinton sand. In Section 21, Madison Township, Perry County, the Atha Oil Co. completed a 20-bbl. producer on the Melick Brothers' farm. The nearest approach to a good producer is the Empire Gas & Fuel Co.'s No. 3 on the Delpha Nether farm, in Lot 10, Hardy Township, Holmes County, which produced 125 bbls. the first 24 hours after drilled through and shot in the Clinton sand.

Trenton Rock Duster

What may be regarded as one of the most important completions of the week is the E. H. Everett Co.'s second test on the T. M. Walcutt heirs' farm, in Hanover Township, Licking County. This well was drilled into the Trenton Rock to a total depth of 5,225 feet. At that depth the hole filled up 4,500 feet with salt water and contained no traces of oil. Several years ago a determined effort was made to develop a Trenton Rock Pool in the vicinity of Newark, Licking County. Several light producers were completed and as many dry holes. The cost to drill for production in the Trenton Rock in the eastern part of the State is greater than in any other part of the eastern fields. In Guernsey County, drilling for gas in the Niagara lime is almost as expensive. However, some of the gas wells are of a size that justifies the outlay.

Good Producer in West Virginia

On Yellow Creek, Sherman district, Calhoun County, the Hope Construction & Refining Co. has completed a test on the Mary Whipkey farm. The location is 4,000 feet southeast of the same company's test on the Mary Radenbaugh farm. The well produced 200 bbls. the first 24 hours after drilled into the Berea grit. Aside from the size of the well it is located far enough in advance of production to be of interest.

On Green Creek, Walton district, Roane County, the Clifton Oil & Gas Co. has completed and shot in the Big Injun sand No. 15 on the I. L. Summers farm, good for 3 bbls. a day.

In Simpson district, McGrady & Whaler have completed a test on the A. S. Morrow farm. It is a duster in the Gordon sand. In the same district, the Bridgeport Gas Co. has a light gasser in the same formation at a test on the J. C. Johnson farm.

Wood County

On Laurel Creek, Union district, Wood County, the South Penn Oil Co. has completed No. 5 on the Wharton farm. It is a very light pumper in the Berea grit. In the same district and same county, the same company has completed a second test on the A. B. Howard farm. It is also a very light pumper in the Berea grit.

In Walker district, Wood County, the Four S. Oil & Gas Co. has a 2-bbl. pumper in the Maxon sand at a test on the Elbert Blewer farm. In the same district, the Congdon & Woodyard Oil Co.'s No. 12 on the Elgis Garn farm is a 25-bbl. producer in the Berea grit. The South Penn Oil Co. has the rig completed for No. 20 on the Susan Grant farm, and No. 8 on the William Eschenbasher farm.

On Green Creek, Harper district, Roane County, the United Fuel Gas Co. has completed in the Big Injun sand a test on the Simmons-Depew farm. It is a light gasser. On Fink Creek, Freemans Creek district, the Carnegie Natural Gas Co. has the rig completed for a test on the W. M. Means farm.

Boone County

In Cook district, Boone County, the Owens Bottle & Machine Co. has completed No. 14 on the S. Anderson farm. It is a light gasser. In the same district, the same company's second test on the Roxy Linville farm is a gasser good for 238,000 feet. In Scott district, the same company completed in the Big Injun sand a test on the J. H. Ester farm. It is a light gasser.

In Church district, Wetzel County, Bell Brothers have now drilled their test on the J. C. Hixenbaugh farm through the Gordon sand and dry in all formations. In the same district, the Francis Oil & Gas Trust is fishing at 2,150 feet at a test on the Martha Six farm. In the same district, the Pittsburgh & West Virginia Gas Co. has a gasser in the Gordon sand at No. 3 on the Moses Bartrug & Co.'s farm. In Center district, the Myers Oil & Gas Co. has started to drill a test on the F. W. Yocum farm.

In West Union district, Doddridge County, the Eastern Union Gas Co.'s test on the J. J. Smith farm is a gasser in the Gordon sand. In New Milton district, Trainer & Travis are fishing at 1,950 feet on the George Ross farm. G. B. Travis and the Manufacturers Light & Heat Co. are fishing on the L. W. Robinson and Henry Ahous farms.

Ritchie County

In Union district, Ritchie County, the Pittsburgh & West Virginia Gas Co. has a gasser in the Big Injun sand at a test on the A. H. McGill farm. In Murphy district, the Spruce Oil & Gas Co.'s second test on the E. C. Wilson farm is a gasser in the same formation. In Troy district, Gilmer County, the Carnegie Natural Gas Co. has the rig completed for a test on the Lester G. Hart farm.

The West Virginia fields reported very few completions. In Henry district, Clay County, the South Penn Oil Co. completed and shot in the Big Injun sand No. 38 on the O. D. Stockly farm, estimated to be good for 25 bbls. a day. In the same district and county, the Virginian Gasoline & Oil Co. completed No. 3 on the Lockhart lease. It is 600 feet north of the South Penn Oil Co.'s test on the R. F. Parker farm and is good for 10 bbls. a day.

On Washington Creek, Union district, Wood County, E. A. Sweeney has completed in the Berea grit a test on the G. H. Ralston farm. It is a duster. In the same district, the South Penn Oil Co. is due in the sand at a second test on the A. B. Howard farm. J. W. Earle and others have the rig complete for a second test on the B. H. Frazier farm.

Drilling Test Wells

In Grant district, Ritchie County, Swingle and others have drilled a test on the Robert Templeton farm to a depth of 1,826 feet and shut down. In the same district, Lucas & Mehaney are drilling on the Sarah J. Scadden farm. W. H. Bickel has shut down for gas at his test on the Olive Whitecotton farm. R. C. Jackson and others are building a rig on the Wilson-McGregor farm. In Murphy district, J. F. Deem & Co. are due in the salt sand at a test on the Joseph Tingler farm. In Union district, Wood County, Bennett & Earle are rigging up on the B. H. Frazier farm. In Murphy district, Ritchie County, the Hope Natural Gas Co. is hauling rig timbers to a location on the Edwin R. Tibbs farm.

In Carroll district, Lincoln County, the Kingrey Oil & Gas Co. is due in the Berea grit on the J. T. Turley farm. In the Mannington district Marion County, Monroe & Laughlin are rigging up on the R. A. Moffett farm. In Troy district, Gilmer County, the Star Oil & Gas Co. has rig material at a location on the Porter G. Nutter farm. In Grant district, Wetzel County, the Shimwell Oil & Gas Co. is rigging up on the W. J. Price farm.

In Ten-Mile district, Harrison County, Garrett & Lyons have started to drill on the Fernand Rodgers farm. In DeKalb district, Gilmer County, the Philadelphia company has a rig on the Louisa Danley farm. In Sherman district, Calhoun County, the Euclid Oil & Gas Co. has rig material at a location on the L. L. Lynch farm. In Liberty district, Marshall County, the Manufacturers Light & Heat Co. is hauling tools to a location on the Jacob & Ardelia Evans farm.

On the Kanawha River, Center district, Calhoun County, W. H. Bickel has the rig completed for a test on the Bills heirs' farm. On Fish Creek, Liberty district, Marshall County, the Carnegie Natural Gas Co. has rigs completed for tests on the C. E. Yeater and S. N. Cole farms. L. P. Bickel & Sons are drilling down to the Berea grit No. 3 on the A. V. Hammett farm, in Wood County. In the same locality, Ira Conley and others are drilling down to the same formation No. 1 on the Soloman Holpp farm.

In Paw Paw district, Marion County, the Owens Bottle & Machine Co. has the rig completed for a test on the John Rice farm. In Union district, Ritchie County, the Carnegie Natural Gas Co. has the rig completed on the Newton Cox farm. In Sherman district, Calhoun County, the Euclid company has a rig completed on the L. L. Lynch farm. On Straight Creek, Walker district, Wood County, I. Conley has a rig up on the L. L. Anderson farm.

Southeast Ohio

In the southwest quarter of Section 12, Reading Township, Perry County, the Ohio Fuel Supply Co. completed and shot in the Clinton sand a test on the Tennyson Christ farm. It produced 33 bbls. the first 24 hours. In the northwest quarter of Section 21, Madison Township, the Atha Oil Co. completed and shot in the same formation No. 13 on the Melick Brothers' farm, good for 20 bbls. a day.

In the southeast quarter of Section 26, Falls Township, Hocking County, the Kingstone Oil Co.'s test on the A. F. Skinner farm is a duster in the Clinton sand. In Section 24, Green Township,

(Continued on Page 97)

PETROLEUM STATISTICS, SEPTEMBER

By G. R. Hopkins

The production of crude petroleum in the United States during the month of September, 1926, as compiled from pipeline runs reported to the Bureau of Mines, Department of Commerce, amounted to 65,201,000 bbls., a daily average of 2,173,400 bbls. This is the highest daily average quantity transported from producing properties since June, 1925, and is an increase over the previous month of 1.3 per cent, and over September, 1925, of nearly 1 per cent.

The major portion of the increase in national production was recorded in the Mid-Continent district, or more specifically in the Panhandle Field. The Spindletop Field also increased its daily average production, though to a much lesser extent than in August. Production in California fell off slightly but remained above the 600,000-bbl. mark. The Rocky Mountain district was the only one to record a decrease in production in September, its daily production falling below the 100,000-bbl. mark for the first time since last winter.

Imports of crude petroleum in September, 1926, were 4,350,000 bbls., a material decrease from the preceding month. Imports from Colombia continued to increase as the feature of the month.

Total stocks of crude petroleum east of California increased 200,000 bbls. in September, this being the first time since May, 1925, that these stocks have increased. In view of the rapid development of the Panhandle Field and the decline in gasoline demand, this increase was not unexpected. Stocks of both light and heavy crude oil in California decreased in September and more than counterbalanced the increase in the rest of the country.

Refined Products

Runs to stills of crude petroleum during September, 1926, amounted to 66,528,000 bbls., of which 4,236,000 bbls. was foreign crude petroleum. This total represents a daily average of 2,218,000 bbls., which is the highest figure ever recorded for daily runs to stills.

Daily gasoline production established a new record in September when 24,834,000 bbls. were produced, representing a daily average of 827,800 bbls. This is an increase over the previous high figure, that of August, 1926, of 8,000 bbls. or 1 per cent. Consumption did not keep pace with production in establishing record figures, in fact

(Continued on Page 114)

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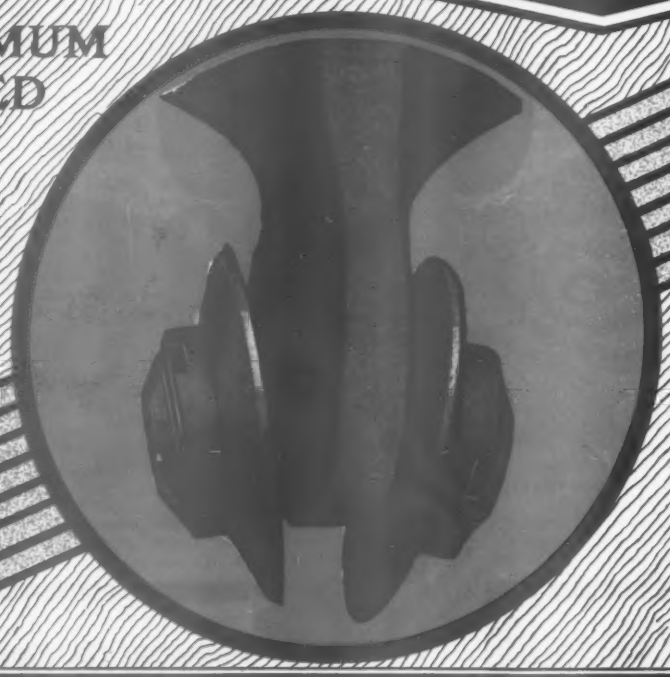

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MEN KNOWN IN OILDOM

Ray M. Collins

Ray M. Collins, of Tulsa, Okla., who was chosen umpire in the Seminole Pool, in Oklahoma, and whose duty it will be to supervise the proration of pipeline runs from the wells in that potentially enormous oil area and incidentally to maintain peace between the producers and the pipeline companies, is an oil man of long experience and a trained engineer.

Mr. Collins was born in Bradford, Pa., in 1880. He attended the public schools there and the Fort Plain, N. Y., Military School, after which he was sent to Stanford University, in California where he graduated as a mining engineer.

His first engineering work was in the Peruvian mines of the Inca Mining Company, in which his father was heavily interested. Later he did engineering work in Alaska. In 1904 he came to Oklahoma and became a member of the contracting firm of Leonard, Matson & Collins, which firm drilled many wells in the Mid-Continent Field. In partnership with Hugh King and Lewis Emery, Jr., he operated in the Cushing Field in the boom days of that greatest of Mid-Continent fields, an experience which should be of benefit to him in his work just begun in the Seminole Field. Mr. Collins has been president of the Echo Oil Company for years. His company operates principally in the Osage Nation and the Bird Creek district.

Ray Collins is a son of the late C. P. Collins, one of the best known of the old guard of oil men and one of the founders of the original Devonian Oil Company.

He is well fitted by experience and temperament for the difficult job of judge and jury in the differences that may come up in the course of the development of the Seminole Field. The selection of Mr. Collins was made by the interested parties, representing the producers and pipelines, and when his name was mentioned no other name was thereafter suggested.

PERSONAL PARAGRAPHS

Monroe Chaney, of Coleman, Tex., was a recent visitor in Fort Worth, Tex.

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A. N. Mackenzie, of California, is in South America for the Sinclair Oil Corporation.

• • •

A. H. Carson, of the Ajax Iron Works, of Corry, Pa., was a Tulsa, Okla., visitor recently.

• • •

K. F. Mather has been appointed associate professor of petroleum geology in Harvard University.

• • •

F. H. Leidecker, president of the Leidecker Tool Company of Marietta, Ohio, is visiting Tulsa, Okla.

J. W. Kruisselbrink, who spent the past year in Holland, has returned to Tulsa, Okla.

• • •

S. L. Mason has returned from Mesopotamia where he was engaged with the Turkish Petroleum Company.

• • •

A. F. Crider, chief geologist of the Dixie Oil Company at Shreveport, La., is recovering from a long illness.

• • •

Roy E. Dickerson, of San Francisco, Calif., is in South America for the Standard Oil Company of California.

• • •

Phil B. Dolman, petroleum geologist, of Tulsa, Okla., has removed his offices and residence to San Angelo, Tex.

• • •

E. H. Leroux, president of the Oklahoma Pipe Line Company, visited the firm's new Tulsa, Okla., office last week.

• • •

John Bell has been mapping the Los Aldamas structure near Monterey for the International Petroleum Company.

• • •

C. Don Hughes was chosen president of the Panhandle Geological Society at Amarillo, Tex., and Kenneth Wilson, secretary.

• • •

Jeff Adams, chief scout of The Texas Company, Houston, Tex., made a brief trip into the Louisiana-Arkansas Fields last week.

• • •

John G. Burtt, formerly with the Roxana Petroleum Corporation in Tulsa, Okla., is in California with the Shell Oil Company.

• • •

John Edwards, of the Paragon Refining Company, Toledo, Ohio, is on a business trip to New York and in the East for his company.

• • •

G. E. Shoup of the Oil Well Supply Company, Pittsburgh, Pa., has been calling on the trade in the Mid-Continent fields lately.

• • •

F. A. A. Van Gogh, chief geologist of the Dutch-Shell companies, recently inspected their operations in California and the Mid-Continent.

• • •

A. R. Haysel, in charge of sales for the Petroleum Appliance Company of Los Angeles, Calif., spent a few weeks in the Tulsa, Okla., region.

• • •

A. C. Veatch, of the Sinclair Companies recently visited Angola, Portuguese, South Africa, where explorations for oil are being carried on.

• • •

W. H. Bowers, oil operator, who has been in the Del Rio territory for some time, passed through San Antonio, Tex., on his way to Amarillo.

• • •

J. I. Davern, Houston, Tex., of the Gulf Pipe Line Company, made a recent trip over the Gulf company's lines in Louisiana and Arkansas.

• • •

John C. Templeton, formerly of the Anglo-Persian Oil Company, is now with the geological department of the Humble Oil & Refining Company.

• • •

Max Ball and E. Russell Lloyd, of the Argo Oil Company of Denver, Colo., dropped into Tulsa, Okla., for a few days in the Mid-Continent headquarters.

• • •

Richard Repine, representing the Foos Gas Engine Company, Springfield, Ohio, visiting the Mid-Continent fields, was in Tulsa, Okla., for a few days.

• • •

Sir John Cadman is to be made chairman of the board of the Anglo-Persian Oil Company early in 1927, succeeding Sir Charles Greenway, who will resign.

• • •

Jacques Vinmont, president of the California Petroleum Corporation, has returned to Los Angeles from New York, where he closed a deal which gave the California Petroleum Corporation four new tankers.

• • •

W. B. Hagan, of Buell & Hagan, Tulsa, Okla., recent entrants into north and west Texas fields, was in Fort Worth, Tex., last week on business. The firm is drilling wells in Pecos and Atascosa Counties.

President E. A. Durham, of the Petroleum Exploration Company, Sistersville, W. Va., spent some few days in Kentucky, visiting Louisville and Lexington.

• • •

A. O. Hayes returned from the Argentine where he was associated with the Standard Oil Company of New Jersey, has joined the Geological Survey of Canada.

• • •

Ruben Cotulla, geologist in Texas for the Wents Oil Corporation, and Leigh Taliaferro, land man for the same concern, were Fort Worth, Tex., visitors last week.

• • •

W. K. Mellon, district manager, Petroleum Rectifying Company, made a week's tour of Louisiana and Arkansas Fields recently and returned to his Houston, Tex., office.

• • •

William R. Johnson, Mid-Continent representative of the American Schaeffer & Budenberg Corporation, with offices at Tulsa, Okla., has been calling on the trade in north Texas recently.

• • •

Harry B. Burlow, manager of oil field sales for Templeton, Kenly & Company, Ltd., Chicago, has been covering south Texas and the Mid-Continent areas and is now on his way to California.

• • •

Edward Dotson, Falcon, Ky., has moved a string of tools to the Saginaw, Mich. oil field and will do some work there. Brand Brothers' also of Falcon, have shipped drilling outfits to the Saginaw Field.

• • •

W. P. Simmons, of Bowling Green, Ky., representative of the E. M. Treat Company, has left for New Mexico, where he expects to spend four or five weeks looking over the field in the interest of his company.

• • •

Dr. Jacque C. Morrell of Chicago, chief research chemical engineer of the Universal Oil Products Company, is at Parco, Wyo., doing some research work in connection there with the Dubbs cracking plant of the Prairie Oil & Gas Company's refinery.

• • •

W. H. Judd, formerly of Oil City, Pa., and now residing in Ohio, was a Casper, Wyo., visitor at the home of Mr. and Mrs. William Holland. Mrs. Holland is a daughter of Mr. Judd who was an old-time oil operator of the eastern fields. Mr. Holland is the field superintendent of the Ohio Oil Company in the Rocky Mountain region.

• • •

S. A. Gutberlet, valuation engineer, and Frank C. Callahan, certified public accountant, who are associated with Samuel J. Caudill, petroleum engineers and tax counsellors of Tulsa, Okla., have just returned from Los Angeles, Calif., where they have been making an examination of a number of producing oil and gas properties in the various California fields.

• • •

Officials of the Texas Production Company, a subsidiary of The Texas Company, arrived in Casper, Wyo., to make a tour of the oil fields of central Wyoming, where The Texas Company is interested and to inspect the Casper refinery. The party consisted of Vice Presidents Judge F. W. Freeman and T. J. Moran; General Superintendent A. B. Patterson of Denver, Colo., Thomas Freeman of the Denver office, and Albert Rockwell of Warren, Pa.

• • •

Nelson K. Moody, president of the Prairie Oil & Gas Company, was an Amarillo, Tex., visitor recently. While there he completed negotiations between his company, the Shamrock Petroleum Corporation and the former stockholders of the Big Creek Petroleum Company involving the acreage on which the Big Creek well, estimated good for 1,000 barrels daily, is located. The Prairie now has a quarter interest in this property.

• • •

Officials of the Continental Oil Company of Denver, Colo., have just completed a tour of Texas oil fields covering more than 2,000 miles by automobile and culminating in a banquet at Wichita Falls, Tex. The party included E. T. Wilson, chairman of the board; S. H. Keoghan, president; W. H. Ferguson, vice president; E. S. Karstedt, vice president in charge of marketing; J. M. Hollister, general manager; J. S. Curtis, eastern sales manager; A. B. David, manager of refineries; J. T. Kinney, manager of pipelines; G. F. Smith, treasurer, all of Denver, Colo.

Natural Gas Developments

Ownership of Residue Gas in Osage May Be Put Up to the Courts

The Osage Oil and Gas Lessees Association has received a letter from J. George Wright, superintendent of the Osage Indian Agency, transmitting the decision of the Department of the Interior on the matter of rules and regulations governing the introduction of air, residue gas or water into the oil wells in the Osage Nation, in Oklahoma, for the purpose of restoring the pressure in the sands. The decision indicates the present attitude of the Interior Department to be one in which no general regulations will be prescribed at this time, thus leaving the decision as to the rights of the oil and gas lessees up to the courts.

A hearing was given the Osage oil and gas lessees last June in Washington at which it was stated the question had been raised as to whether the oil lessee or the gas lessee is the owner of the residue gas left after the gasoline has been extracted from the casinghead gas coming from oil wells in the Osage Nation, and that the matter of instituting a friendly suit for the purpose of determining the legal rights of the parties had been considered prior to the hearing. In his letter to Superintendent Wright Commissioner Charles H. Burke of the Interior Department, writes it appears that should the department undertake to construe the leases and determine who owns the residue gas, the lessee against whom the case was decided would not rest with the decision but would institute suit for the purpose of determining the respective rights of the oils and the gas lessee to the residual gas.

Continuing the letter says: "There were also expressions at the hearing favorable to tempory arrangements for a conference with you, should any lessee desire to resort to the injection of any extraneous substance in any oil well to restore pressure, for the purpose of deciding whether the operation would be permitted and if permitted, it was believed that perhaps in the majority of cases the lessees interested would reach a satisfactory agreement as to the use of the residue gas.

"In view of conditions as they now exist, It is not believed advisable to adopt general regulations covering this subject. If any specific case arises where it is desired to resort to the practice indicated and the parties interested are unable to reach a satisfactory agreement the case may be submitted to this office for consideration. You may accordingly so advise the representatives of the oil and the gas lessees and the casinghead gas manufacturers."

OUSTER PROCEEDINGS BEGUN AGAINST IRION

SHREVEPORT, La., Nov. 6. — Governor O. H. Simpson, of Louisiana, has instructed Attorney Percy Saint to institute at the earliest possible date ouster proceedings against Dr. V. K. Irion, head of the Louisiana Conservation Commission. The resignation of Doctor Irion was demanded a few days ago by the governor, who charged the conservation chief with gross mismanagement of the affairs of the conservation commission. Doctor Irion refused to resign and declared it would require court action to remove him from office.

"The charges are of such a nature that I am entitled to and desire to have myself vindicated by the courts," the conservation chief is quoted as saying. "As the matter now stands, it is one for the courts and I will answer the governor's charges fully before the courts."

USE CRUSADER LINE FOR GAS TRANSMISSION

SHREVEPORT, La., Nov. 6. — Natural Gas & Fuel Corp., El Dorado, Ark., has leased approximately 25 miles of the north end of the Crusader Pipe Line Co.'s 10-inch line from the Smackover Field to the Crusader company's river terminal at Vidalia, La. The line leased is from station No. 1 in the Norphlet area to station No. 2, approximately 25 miles south. By the terms of the lease the Crusader company can void the Natural Gas Corp's right to use the line upon 24 hours' notice.

Natural Gas & Fuel Corp. will use the line as a gas transmission line to supply fuel for wildcat operations in the active Lawson area in Union County. The gas company has several large gas wells in Norphlet.

HUNTINGTON BEACH IS RICH IN WET GAS

LOS ANGELES, Calif., Nov. 6.—Wells completed in the new city field at Huntington Beach are producing one of the richest grades of wet gas to be found in the entire State of California, according to chemical analyses. In many wells the content of casinghead gasoline runs higher than three gallons per 1,000 feet, and the average is between two and three gallons.

This high quality makes the wet gas production of Huntington Beach wells an important feature, in spite of the fact that the average total gas output is not high. Gas production of between 2,000,000 and 3,000,000 feet per well is an unusually high figure for Huntington Beach, the average not being more than 1,500,000 feet.

TEXAS TOWNS TO GET GAS EARLY NEXT YEAR

CUERO, Tex., Nov. 6.—Gas for Cuero by the first of the year at the same rate charged in Houston, is the promise of Louden C. Doney, Houston engineer, who had set a quota of 500 gas users for Cuero.

Pledges are well over the required number, and there is nothing now in the way of a rapid completion of the pipelines from the fields. Yoakum is reported to have also about obtained its quota of prospective gas users, and it is planned to bring the pipeline from the field to a point half way between Cuero and Yoakum and thence in to both cities.

EDMONTON RATE CASE

CHATHAM, Ont., Nov. 6.—A hearing has been held at Edmonton, Alberta, before the Alberta Public Utilities Commission to consider the application of Northwestern Utilities, Ltd., for a continuance of the present natural gas rates. The present rate is on a sliding scale, from 45 cents net to 25 cents net, according to monthly consumption. The city is making a counter-application for a 25-cent rate.

GAS LINE EXTENSIONS BY SOUTHERN GAS CO.

SAN ANTONIO, Tex., Nov. 6.—Southern Gas Co. has purchased pipe and will lay an 8-inch gas line from its Gas Ridge Field west of this city, to the Adams gas field, 32 miles west, discovered earlier in the year by Henderson & Holden of Eldorado, Kans. Henderson & Holden have four wells completed with a total open flow of dry gas from the four wells of 55,000,000 feet and the Southern Gas Co. has purchased the gas. Henderson & Holden have spudded in their fifth well and have the location for the sixth. In addition Witherspoon Oil Co. of this city has completed one gas well with a gauge of about 6,000,000 feet and is starting another, and Western Gas & Fuel Co., a subsidiary of the Southern Gas Co., has completed one well with an open flow of about 6,000,000 feet.

Western Gas & Fuel Co. has completed the laying of a 4-inch gas line north from the field to Hondo, county seat of Medina County, and is completing the laying of the line from Hondo 10 miles west to d'Hanis, and will supply these two towns on the Southern Pacific with gas from its own and the Henderson & Holden wells. At d'Hanis there is a brick works which has contracted for gas and will be a large consumer. Southern Gas Co. is also laying an 8-inch extension from the end of its line in the Cole Field in Duval County 20 miles south to the Henne, Winch & Fariss Field in Jim Hogg County, where there is considerable gas developed but not being utilized.

GAS COMPANY DEAL

CHATHAM, Ont., Nov. 6. — Negotiations are in progress for a reorganization of the Windsor Gas Co., whereby the Union Natural Gas Co. will, it is reported, secure control of the Windsor enterprise. The Windsor Gas Co. distributes for Windsor and the adjacent border cities in Ontario, securing its supply from the Union Natural Gas Co. It is understood if the deal is concluded approximately $300,000 wil be spend in improving the Windsor system.

DENVER EXPECTS GAS NEARER THAN AMARILLO

DENVER, Colo., Nov. 6.—During a hearing on a proposed new gas franchise in this city George A. Shaw, representing Public Service Co., said:

"The more important things to be considered are the provisions in the event natural gas is brought into Denver and if hydro-electricity is developed near the city. Another important item is the fact that gas and electricity rates have been substantially reduced in the new franchise.

"The company does not agree to bring natural gas into Denver. We have had engineers at work for several months surveying the possibilities for natural gas and they have found that the nearest field is at Amarillo, Tex. To bring this gas to Denver would mean the construction of a 400-mile pipeline at a cost of $12,000,000.

"The Public Service Co. does not think it advisable to guarantee to bring this gas to Denver because of the huge investment involved. Should gas be found nearer to the city it would practically mean the Amarillo line would be abandoned because the other gas could be sold here cheaper. The chance that gas might be found nearer to Denver is fairly good as there are 51 wells being drilled in the State at the present time, any one of which may bring gas in sufficient quantities to supply Denver.

"Should gas be found nearer to Denver we would be willing to bring it here or should some company offer to deliver the Amarillo gas here we would be willing to distribute it as we believe the gas consumers would be entitled to any reduction in rates which natural gas would bring."

The gas rates under the new franchise are not fixed for the 20-year period for which the franchise is asked. Instead they may be changed at any time by an initiated ordinance, Mr. Shaw explained.

The new franchise does not provide for the payment of an annual tax of $50,000, as the old one does, it was brought out. Instead, Mr. Shaw said, the company believed it better to eliminate this tax and absorb it in reduced rates to the consumer.

NEW TEXAS GAS LINE

BROWNSVILLE, Tex., Nov. 6.—The contract which Lower Rio Grande Gas Co. has made with Hope Engineering & Supply Co., for construction of a 150-mile natural gas pipeline from wells in Jim Hogg, Star and Zapata Counties to Brownsville, provides that the work must be completed within six months after the right of way has been obtained. J. W. Gaines, president of Lower Rio Grande Gas Co., states line will cost approximately $4,500,000 and that it has been financed. The main line will be 12-inch pipe from the fields to San Benito, and from there to Brownsville it will be an 8-inch line.

GAS FOR STEPHENS, ARK.

EL DORADO, Ark., Nov. 6. — Franchise to supply gas to Stephens, Ark., consumers has been granted the Stephens Fuel Co. by the city council, and construction of the distributing system will begin within a few days. The gas will be drawn from wells owned by the Buffalo Oil Co., which, with others in the field, make over 50,000,000 feet daily available. The Stephens Fuel Co., capitalized at $200,000, is composed of local people, with W. L. Curry, president; E. H. Morgan, vice president; N. S. Yarbrough, secretary-treasurer; R. B. Allen and A. Foster, directors.

California Natural Gasoline Production, Distribution and Stocks for September

Production

Type of Plant—	Gas Treated M.C.F.	Natural-Gas Gasoline Prod. (Gallons)	Gaso. Recovery per M.C.F. Gas Treated (Gallons)
Oil absorption	15,147,545	20,923,569	1.381
Compressor	316,351	515,111	1.628
Combination compressor and oil absorption	3,686,459	6,338,566	1.719
Combination oil and charcoal absorption	4,773,793	4,934,613	1.034
Charcoal absorption	1,284,349	57,925	.045
Drip	.....	8,482	....
Total	25,208,497	32,778,266	1.300

Finished gasoline produced at plants—4,411 bbls.

Distribution

	Barrels	
Stocks first of month	.....	284,258
Production during month	.....	780,435
Quantity mixed with crude or unfinished oils	265,104	.....
Used in blending at refineries	330,120	.....
Stocks end of month	298,111	.....
Used at plants, shortage and evaporation losses	13,962	.....
Balance	157,396	.....
Total	1,064,693	1,064,693

Stocks

	Gallons	or Bbls.
Natural-gas gasoline held by natural gas gasoline plant operators	1,227,936	29,237
Natural-gas gasoline held by refiners	11,292,708	268,874
Total	12,520,644	298,111

Finished gasoline (motor fuel) held by natural-gas gasoline plant operators, 200 barrels.

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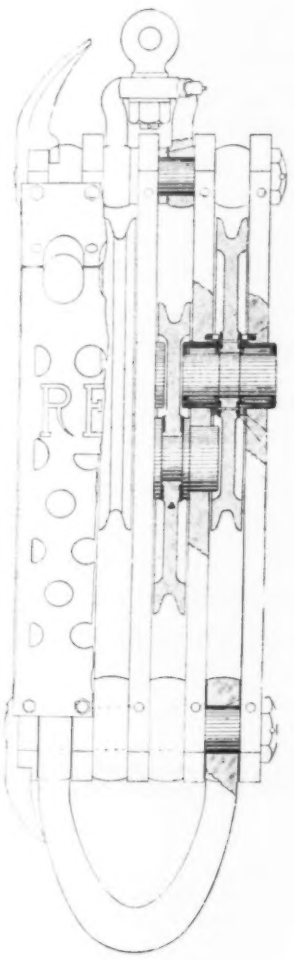

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Each part is standardized and when a part finally becomes worn it can be replaced on the derrick floor without delay and the Block is then as good as new.

Alemite lubrication.

Each pin rotates with its individual sheave, offering far more bearing surface than in any other Block.

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Our Catalog gives other facts that will interest you. Ask for a copy.

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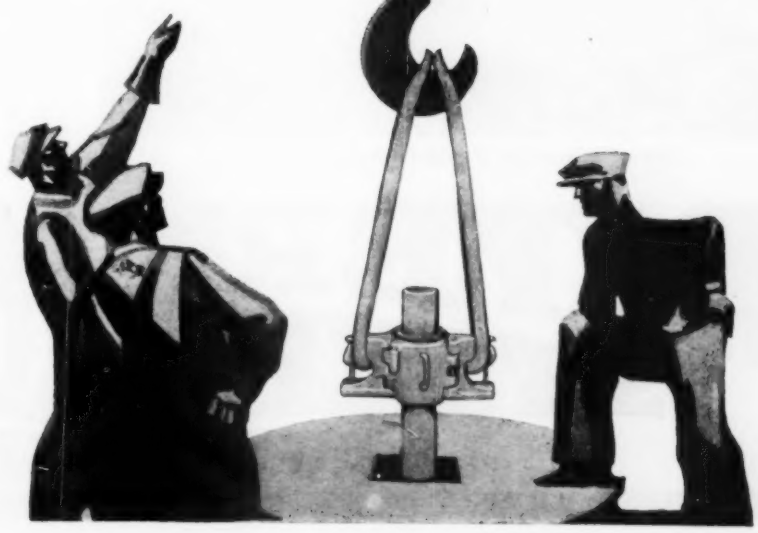

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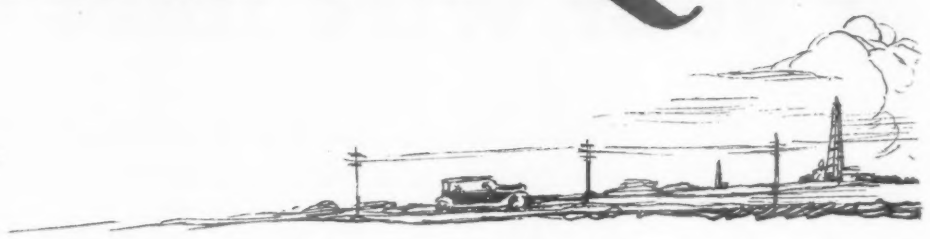

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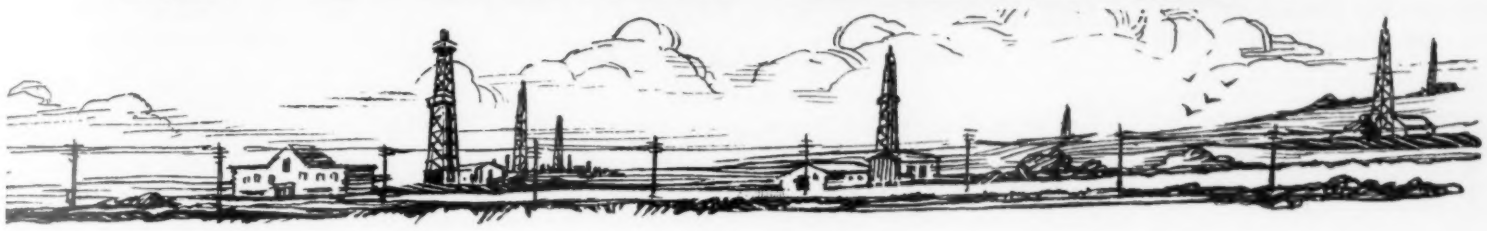

EVERY piece of "IDECO" equipment incorporates the combined knowledge of veteran oil men and long-experienced steel fabricators. Men in the field know the designs are most suited to their requirements. Those in the factory know exactly what is expected of their products and build accordingly.

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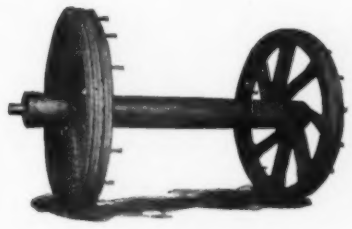
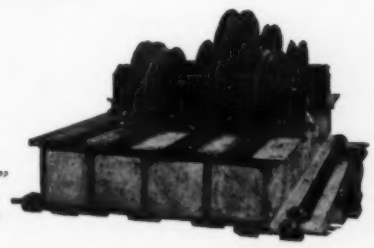


"Ideco" Steel Bull Wheel



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INTERNATIONAL STEEL IDECO DERRICKS (GALVANIZED)

EQUIPMENT AND SUPPLIES

APPOINTED PRESIDENT OF BERGER COMPANY

Shirley S. French, formerly vice president and general manager of the General Fireproofing Co. of Youngstown, Ohio, has been appointed president of the Berger Manufacturing Co. of Canton, Ohio, a division of the Central Alloy Steel Corp.

Mr. French has spent his entire working life in the steel business, beginning as tally boy with a Youngstown steel company upon leaving high school. When the steel works at Gary, Ind., were built, Mr. French served in an engineering capacity until construction was finished, returning to Youngstown in 1913 as chief clerk at Brier Hill Steel Co.

Later he was appointed general manager of the William Tod Co., and nine years ago accepted the position of vice president and general manager of the General Fireproofing Co, resigning to accept the Berger presidency.

TAG CODEX ISSUED

The C. J. Tagliabue Manufacturing Co., manufacturer of industrial thermometers, has just issued another edition of the Tag Codex, the company's catalog. In this catalog, the company's voluminous catalog information has been codified to the last degree and the book now stands as one of the most complete but readily understandable publications of its kind in the industrial field.

NAMED DALLAS MANAGER

J. E. M. Schultz has been appointed manager of the Dallas, Tex., office of the Sullivan Machinery Co. of Chicago. He succeeds D. H. Hunter, who has resigned. Mr. Schultz has had a long experience with this company, having been associated with the office at Knoxville, Tenn., in charge of business in North and South Carolina, Georgia and Florida. His office at Dallas will be 522 Santa Fe Building.

LINE PIPE REQUIREMENTS PLACED FOR USE EARLY IN COMING YEAR

By B. E. V. Luty

PITTSBURGH, Pa., Nov. 8.—Some of the pipe mills are now fairly well caught up in deliveries of oil country goods while others are not. Some offers of shipment of casing in three weeks have failed to bring orders, the prospective buyers being able to secure better deliveries elsewhere.

The volume of buying in oil country goods has continued decreasing, but there is still no little business being done, probably at least half as much as the average amount in the summer. Little further decrease is expected for the winter, as the more southerly oil and gas fields keep working pretty much throughout the year.

Merchant pipe demand is of very fair volume for the time of year, being quite above the usual amount for this date, this being due to jobbers not having stocks to liquidate. Consumption is decreasing as winter is approached and the buying keeps in relation with the consumption.

There has been a little decrease in operation of butt weld departments of pipe mills in the past few weeks, the decrease in production not being as great as the decrease in shipments as mills are replenishing stocks. In lap weld departments there has been no decrease at all, as shipments have continued equal to capacity. As mills catch up in lap weld deliveries they will turn in to replenish stocks, which have been practically nothing thus far, and there will be little decrease in production. Some mills foresee shipments at capacity through the present month, and replenishment of stock would take more than a month, even with rather light shipments. The pipe industry as a whole is operating at about 90 per cent full.

Expect Line Pipe Buying

Producers believe there is a great deal of line pipe requirements to be placed for use early next year, and expect buying to be active in the next couple of months, as prospective users find the pipe mills again in position to offer definite deliveries. The last important order, place about three weeks ago, was on this basis, the pipe to be made through the winter and distributed for laying in the spring. This order was for a 20-inch gas line, 165 miles, in West Virginia and Kentucky, of the Philadelphia company, a public service corporation operating chiefly in Pittsburgh.

Rail orders placed on the present movement for 1927 delivery now total consid-

(Continued on Page 76)

LINK-BELT TO EXTEND HORSEPOWER RANGE

The Link-Belt Co. of Chicago announces it has extended the horsepower range of Link-Belt silent chain drives from its present scale of one-half to 10-horsepower, in practically any reduction from 1 to 1 up to 7 to 1.

The step-up to 15 horsepower is the first change made by the Link-Belt Co. in the original plan of stock drives distribution, but does not interfere with engineering drives which this company has furnished for 20 years.

TO VISIT FOREIGN BUYERS

Victor H. Smith, vice president of the North American Car Corp., has sailed for Europe to interview several foreign buyers of various American, principally Mid-Continent, petroleum products for export. His work will be in connection with his company's program of providing additional facilities for transporting and terminaling export products.

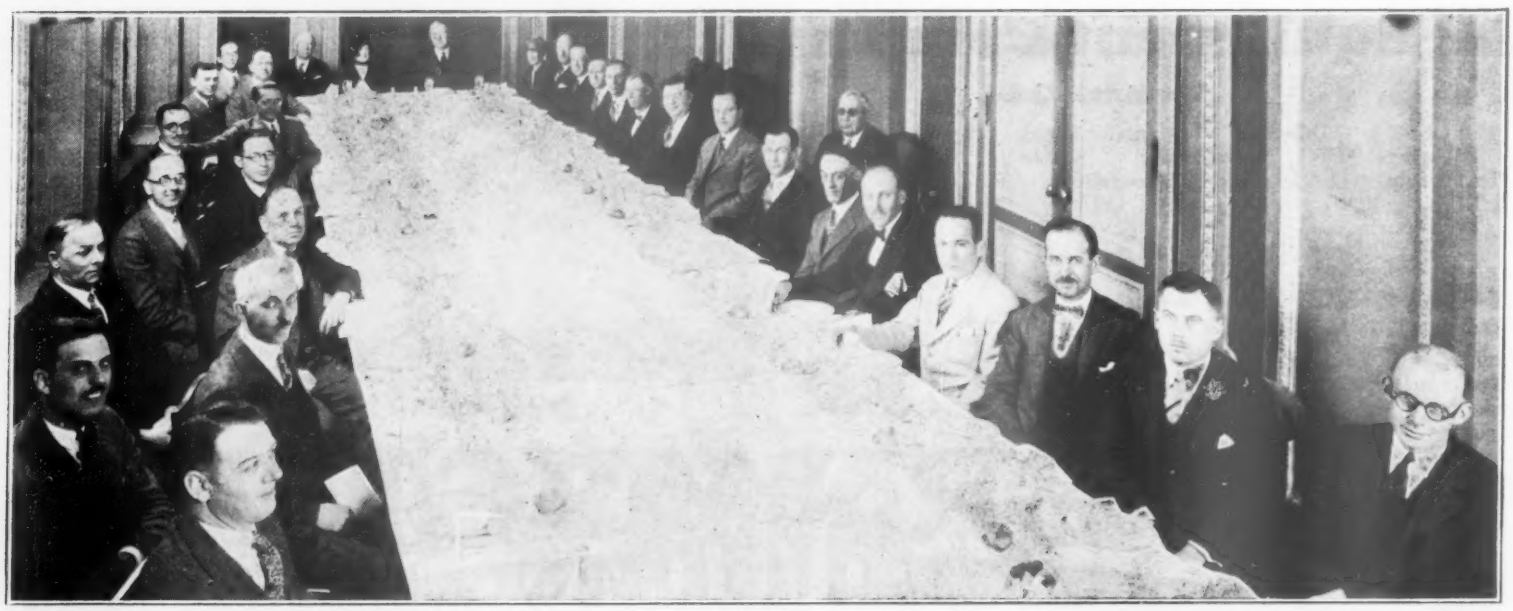
HAS PERFECTED NEW FRACTIONATION STILL

I. B. Funk, Los Angeles consulting engineer, has become associated with the Newton Process Manufacturing Co. of Fullerton, Calif., in an advisory capacity. Mr. Funk has had a wide range of experience in the oil industry, especially in the design and operation of natural gasoline plants, and during the last five years practically all his time has been devoted to research work on natural gas absorption and refinery distillation and fractionation.

I. B. Funk

Mr. Funk has perfected a new fractionation still to be known as the Funk combined still, fractionator and condenser.

GRAVER CORPORATION SALES CONFERENCE BANQUET



Thirty-one persons sat at the banquet given by the Graver Corporation during its Jenkins cracking process sales conference at Chicago last week. The gathering included officials of the company, engineers and sales representatives. Also at the conference was T. C. Banta, chief engineer of the Producers & Refiners Corp. at the West Tulsa refinery, who soon is to join the Graver Corp.

In the accompanying picture, beginning at the lower right hand corner, are: T. C. Banta, P. A. Thompson, L. H. Welling, H. E. Clark, L. W. Wichman, Fred Sweeney, J. J. Felsecker, James Sanforth, C. L. Marner, R. T. Phillips, N. H. Ranstead, L. W. Moore, J. J. McKeague, W. F. Graver, L. S. Black, Mrs. Beck, P. S. Graver, Miss Arline, N. S. Jenkins, K. W. Bartlett, E. R. Brown, C. L. Saunders, W. M. Gross, S. B. Beecher, E. S. Thayer, J. A. Wilkins, O. C. Smith, William Briska, E.R. Root, Richard Mayser, Joseph C. Winslow.

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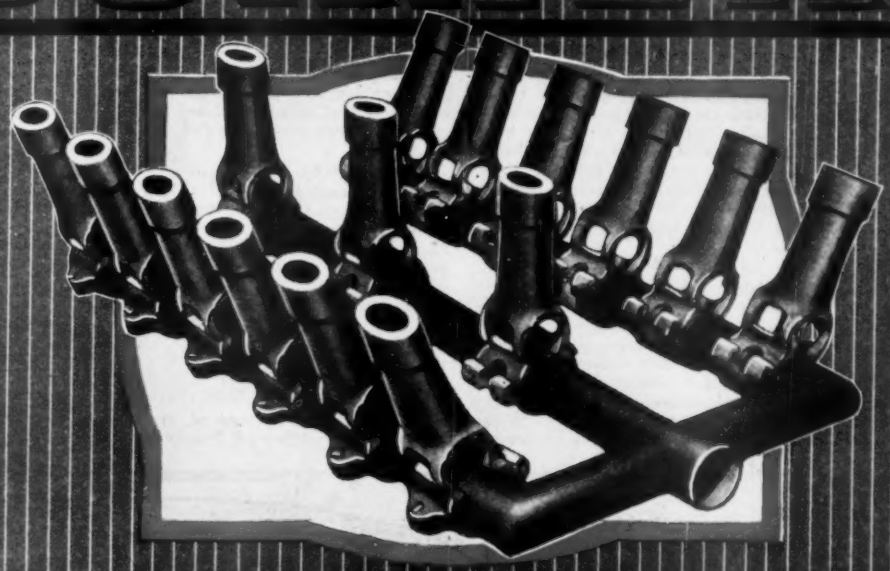

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Ventura Field Controlled Reservoir

Largest Future Producing Factor in California Can Be Accelerated or Retarded. Santa Paula Segregation

By J. E. Eaton*
Consulting Geologist

The Ventura Oil Field in Ventura Basin, California, is one of the truly great petroleum producers of the world, and the most important visible producing factor in California. It is yielding at present around 50,000 bbls. of oil daily from 65 wells, with only a fraction of the geologically probable territory developed (see map).

The writer has previously published the opinion that this field will produce between 150,000,000 and 200,000,000 bbls. of oil and rank fifth in total ultimate production and third in market value of the oil produced among all fields discovered to date in California.

Ventura Basin is further remarkable for the reason that it contains what is probably the maximum tertiary section of the world, some 37,000 feet of sediments of this age being exposed. The Fernando group (Upper Miocene?, Pliocene, and Lower Pleistocene) whose lowest division contains the principal producing horizons of southern California is, moreover, more complete and more continuously exposed here than anywhere else. Recent work has furnished evidence for separating this group into at least four formations having an aggregate thickness of over 20,000 feet.

Pre-Fernando Rocks

Preceding the more economically important rocks of the district is a thick series of sediments that in ascending order includes the marine Tejon formation (Upper Eocene), comprising white sandstone and greenish shale; the non-marine Sespe formation (Oligocene?), composed chiefly of maroon-colored sandstone; and the marine Vaqueros formation (Lower Miocene), consisting largely of gray, heavy bedded sandstone. This series is highly variable in thickness and continuity, due to tremendous overthrust faults that have locally cut out considerable portions. It appears to have been laid down conformably, or at least with no important break in sedimentation.

Grading up from the preceding rocks is the marine Modelo formation (Miocene), which outcrops in a long, east-west mountainous belt. This formation here embraces 2,000 or more feet of hard, brittle siliceous shale with included minor sandstones and soft diatomaceous beds. It is a probable source of the oils produced in the Ventura Field from overlying strata.

Fernando Group

The Fernando sediments are considered at present to rest unconformably upon the Modelo in Ventura Basin. They are here exposed in a marine section about twice as thick as any other in southern California whose geology has been published. A thickness of 19,980 feet has been measured by the writer upon the Santa Paula monocline, where neither the top nor the bottom of the group is visible. These sediments appear to have been almost continuously deposited.

A study of this remarkable sequence has thrown a new light upon the Fernando succession, as it exposes in one continuous section four well-developed formations which are locally unconformable with one another in parts of southern California. Well bedded Fernando sediments that are locally present in Los Angeles Basin, but which are entirely absent at the type locality of the Pico formation, are well developed in Ventura Basin. These sediments, previously unrecognized, are named the Santa Paula formation by the writer, for the reason that they are best exposed and their position was first definitely placed upon the great monocline northwest of Santa Paula.

The San Pedro series, previously considered by most geologists, including the writer, to occur above the Fernando group, is now known from the Ventura Basin section to form a part of what has previously been mapped as undifferentiated Fernando. The San Pedro series is indicated to be more closely related to the Saugus formation than has been suspected. The San Pedro was included in the Fernando in the first publication using the latter term. "Undifferentiated Fernando" includes at least four distinct formations locally separated by unconformities. The following descriptions are preliminary to detailed proof, the numerous faunas being not yet entirely identified, but sufficiently so to establish the premise.

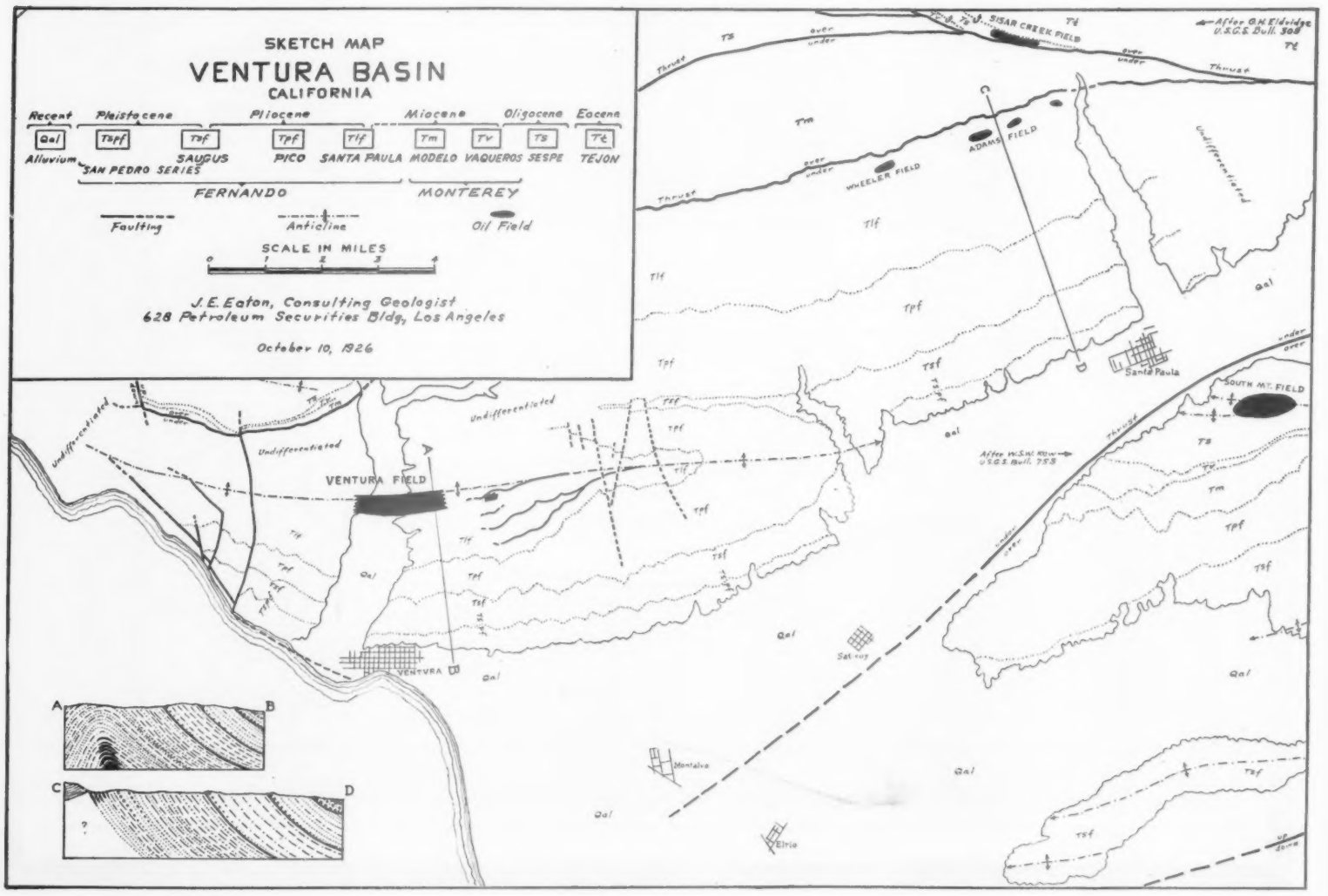
Fernando in Ventura Basin

The Santa Paula formation (Upper Miocene? and Lower Pliocene) exposes northwest of Santa Paula 10,000 feet of well-bedded sandstones, blue sandy and brown sticky shales, and conglomerates. The Santa Paula formation is absent south of Ventura Basin (on the upthrown side of the Santa Clara River fault) from South Mountain to and including the type locality of the Pico formation. The principal productive horizons in Los Angeles Basin and all of the producing horizons of the Ventura Oil Field occur in the Santa Paula. Where this formation is indicated to be absent in southern California, such as in the central blocks between the Santa Clara River and Santa Monica Mountains faults, large production has not been found in the Fernando group. The exposed Santa Paula sediments in Ventura Basin have been identified as being Lower Pliocene in age. The base is not exposed here, however, and is elsewhere indicated to be of Santa Margarita (Upper Miocene) age.

The Pico formation (Middle Pliocene) locally exposes in Ventura Basin 5,000 feet of poorly consolidated strata. A basal conglomerate which rests upon the Santa Paula formation is followed by

(Continued on Page 158)

*Published by permission of the American Association of Petroleum Geologists (preliminary to a technical paper).



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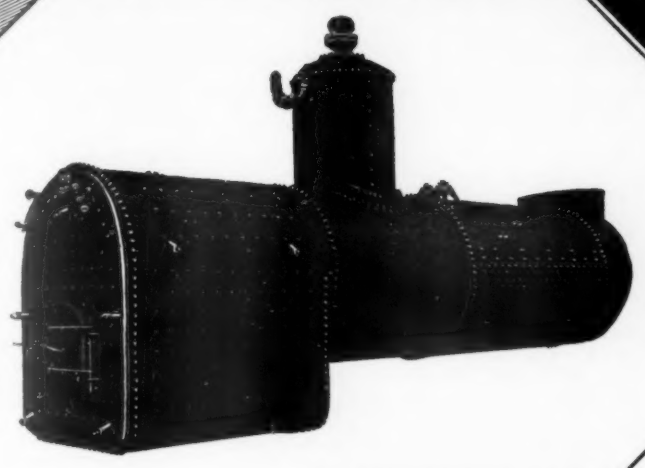

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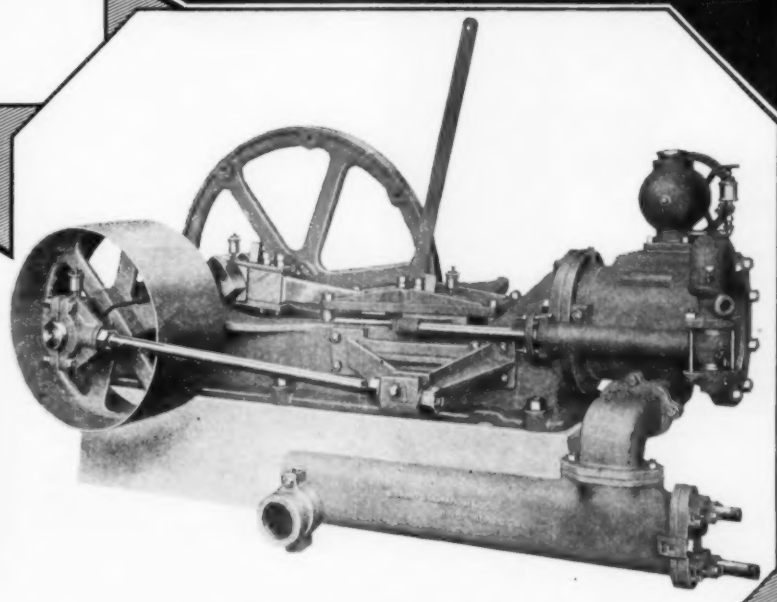

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3	15	4¼	2¼x3¼	5	55
4	18	5¾	3½x4½	5	70
4	20	5¾	3½x4½	5	75
6	18	7⅝	5 x6	4	130
6	20	7⅝	5 x6	4	155
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CONDUCTING VALUABLE RESEARCH ON FLOODING OF OLD OIL FIELDS

By Paul D. Torrey*

Geologist for the Northwestern Pennsylvania Oil Producers Association, of Bradford

Bradford, today, is possibly the greatest petroleum research laboratory in the country and here are being developed methods which may find application throughout the world. In so working out of a system of conserving our petroleum reserves, the field has aroused the interest and admiration of the entire oil industry.

The present work of the Northwestern Pennsylvania Oil Producers Association is intimately connected with that which has been previously done. The research program includes the following problems all of which have a considerable bearing upon reclamation work: a detailed study of the geologic structure and lithologic character of the reservoir rock and the relationship of these geologic features of the sand body to flooding both by air and water, a study of well spacing, a study of the waters that are introduced into the sand and pumped out with the oil and a study of the oil with especial reference to evaporation losses. Recently methods for predicting changes in oil price have been studied and it is hoped that within a short time index numbers on the oil market can be made available to the producers.

The geologic structure of the Bradford sand has been the controlling factor in the accumulation of oil in the field and consequently a thorough knowledge of this structure is essential as a basis for further study. The making of a structure map is therefore of primary importance and this work is being carried on by the Northwestern Pennsylvania Producers Association and by the Pennsylvania Geological Survey. Wherever reliable records are available the work is being done in great detail and on some properties that have been studied it has been found that local structural features of the sand have a very important influence on the movement of the flood. Thickening and thinning of the sand body, variations in porosity and shale breaks may have an equal or greater effect than structural features. In several cases it has been shown that the water has a great tendency to move from a thin part of the sand to a thicker part. Water, and especially air, moving through the sand will follow with much greater facility the more porous parts or as is commonly called soft streaks in the sand It is notable that these soft streaks seem to occur frequently along structural highs and it is therefore probable that both of these features are contributing factors in controlling the movement of the flood.

The triangular pattern of spacing with various modifications is becoming general practice on floods of any size but there are several conditions which should be considered in this method or in any other method for that matter, in planning a flood. If the general geologic conditions are known to be regular the chief problem in a flood of this type is to determine a spacing which will give as thorough and economical depletion as rapidly as possible. On a large property a flooding plan can be developed that will be satisfactory for local conditions. In areas of thick, well saturated sand wells can be profitably spaced closer than in areas of thin or poorly saturated sand because an area which can be closely drilled will be depleted more rapidly than one of a wider spacing which under ordinary conditions would seem to be most desirable.

Question of Spacing

Geologic features that have been previously mentioned may complicate conditions to such an extent that a standard spacing pattern may give very poor results. Where there are marked variations in the character of the sand it may be advisable, if possible, to change the direction of the flood. This, of course, may be difficult and in some cases would probably be so costly as to make it infeasible. Furthermore, in starting a flood on a property where there are no reliable records, a definite plan of flooding to conform to the geologic conditions would be impossible unless data can be obtained from adjoining properties. If a flood line is to be drilled across a lease and the property owner is unfamiliar with the sand conditions and also is in a financial position to do some experimentation, it might frequently pay to wait until the entire line is drilled before letting any water in for it might be that unknown conditions in the sand would make a flood in the opposite direction more successful. Especially this would be true in an area where there are marked variations in sand thickness and where the sand is of fairly uniform porosity, which is not an uncommon condition. The logical plan under such circumstances would be to flood from the thin sand to the thick. Large variations in thickness occur more frequently on the bottom of the sand and therefore if the water is started from thin sand to thick it will not be forced to push its way uphill but can follow the line of least resistance down hill into the thick sand. The producing oil wells located in the thick sand will yield large quantities of water but as long as a well is pumping a fair volume of oil and a property is well equipped the handling of the water is merely incidental. Depletion under such circumstances will probably be much more rapid than otherwise.

The best reason for locating the producing wells in the thick part of the sand body or flooding toward it, if that is feasible, is that there is under ordinary conditions more oil in the thick sand. The sandstones of this area do not thin out as a solid wall but tend to break up into layers interbedded and broken with shale and as it is impossible to state definitely just where these lenses of sand will end there is a great probability that much oil be lost if it is pushed into them. It is true that a certain amount can probably never be recovered under our present methods but if a thick, well-saturated body of sand is known to exist on a property it would be a decided loss to push the oil away where the chances are that it can not near all be reclaimed.

The studies of water movement that have been made indicate that the water will start first in the bottom of the sand unless prevented by variations in porosity. Near the water intake well it would be a matter of more or less gravitational separation, the water sinking to the bottom of the sand and the oil floating on it in the top. As the flood advances and the oil is removed from the producing well the water probably creeps up into the upper part of the sand continually displacing oil and shoving it ahead. In the bottom part of the sand the water is much farther advanced and may shortly come into the producing well long before the upper part of the sand has been flooded. This movement might easily be going on at different rates through separate horizons or in parts of the sand of varying porosity and such a differential movement probably accounts for the irregularities of a flood well decline curve. Were conditions nearly uniform a very effective cleaning might result but since in most cases they are not there is always the danger of pocketing or bypassing. Where there are irregularities in the top of the sand it is quite likely that considerable oil has been pocketed in them. Where the sand has a considerable horizontal variation in porosity much oil may eventually become entirely surrounded by water. It is suggested that the pocketed oil might be rather easily displaced by introducing compressed air or gas into the sand as a gas will tend to occupy the highest part of an enclosed volume that is partially filled with fluid just as oil would tend to float on top of water.

Readjustment of Oil and Water

As flooding is continued throughout the field there is bound to be some readjustment of the oil and water. This movement will probably be a slow process and there is no means of telling in what

*Before New York State Oil Producers Association, Olean, N. Y.

1926
METRIC METAL WORKS
ERIE PENNA
1924
After four years of excellent service it was decided to make the index housing not only moisture proof but as a solid part of the meter top.
Later on it was found necessary to make the index housing moisture proof and circular in shape with a magnifying indestructible glass.
1920
The first curb meter was used in the state of Oklahoma and was designed to meet a special requirement.
1918
METERS
METRIC

The Development of the Curb Meter

With eight years of experience in Curb Meter manufacture back of us we can unreservedly recommend our 1926 Curb Meter as the best that brains, money and gas engineering has produced. The 5 Lt. and 10 Lt. sizes are interchangeable, and the top is constructed so as to facilitate the use of a more accessible and inexpensive curb setting.

It is a masterpiece of meter manufacture.

WESTCOTT & GREIS, Inc.
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DALLAS TULSA LOS ANGELES

METRIC METAL WORKS
of the American Meter Company-Inc.
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Type "M-2"

A new generator for rig lighting

Pyle-National Type M-2 turbo generator has been developed to keep pace with all other field equipment—in greater strength — greater efficiency and capacity—longer service life—and lowered cost of service.

Capacity of 2500 watts is ample for the larger needs of present day lighting, and the Type M-2 will deliver this capacity steadily and smoothly under all conditions.

Send for the full description of the Type M-2, and get the facts on modern rig lighting methods.

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Montreal, Winnipeg, Vancouver, Toronto

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It has been a much mooted question as to what forces are responsible for flooding action. Several authorities have claimed that it was due to a capillary action. Recent experiments performed by H. M. Ryder of the Petroleum Reclamation Co. have shown that the volume of water a well will take is a function of the height of the column of fluid in the hole. It is frequently reported that during dry seasons when the water table drops, that there is a corresponding decline in oil and water production. It therefore cannot be denied that pressure is an important factor in flooding. We have no means of determining how far in the sand the water pressure is effective but as long as there is a pressure differential between a water well and a producing well there will be a movement. It is, of course, possible that this differential does not exist at all due to the resistance of the sand body and the oil to the movement of the water. It has, however, been noted that if a well is off for any considerable length of time a column of fluid is in some cases built up in the hole. This, then, is a measurement of the effective pressure. The movement of the fluid through the sand must be due in part to the regular draining by pumping. As oil is removed it will be easier for the water to come in and fill the pore spaces of the sand. It is possible that the oil is freed from the pore spaces by capillary action and is moved by hydrostatic pressure.

A systematic series of water analyses are being made on several of the properties in the field. It has been found that the fresh water through the sand dissolves a large quantity of various inorganic salts. The concentration of dissolved salts in the water from wells far away from the water intake wells is high but as the flood advances the water becomes a more dilute solution. It therefore may be possible to estimate the life of a well in a given area by an analysis of the water it produces. A study of changes in the water as it moves through the sand would be a large problem in itself and we feel that we are not yet ready to form conclusions. One fact, however, seems to be well established, which is that the presence of the bicarbonate radical in the water from a producing well is good evidence that this water is flood water and is not original or connate water.

Bradford oil possesses qualities which make it one of the highest grade of oils in the world. Careful analyses of it show a remarkably uniform distillation curve and samples taken directly from the wells as pumped have shown as high as 35 to 37 per cent gasoline. Unfortunately, under the present methods of production a considerable quantity of this, possibly the most valuable fraction of the oil, is lost. It would be very hard to give an accurate figure of the amount of oil that is lost by evaporation during the summer months in the Bradford Field because conditions of operation are so variable but this loss has been estimated as about 1,000 bbls. per day. Some of this loss cannot be prevented but preliminary studies on various properties show that much of it can. In some places the loss by evaporation, in tests made in the early part of October, amounted to from 15 to 18 per cent of the total volume of oil produced. Several properties have shown losses of 8 to 10 per cent. If a well is, for example, making 2.50 bbls. of oil per day and there is an evaporation loss of 8 per cent, the actual loss to the producer would be around 5 per week but the loss in gasoline to the refiner who purchases this oil would be over 10. The refiner could therefore well afford to pay a premium for higher quality oil, although the saving of oil by the use of good equipment must be most profitable to the operator.

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LINE PIPE REQUIREMENTS PLACED FOR USE EARLY

(Continued from Page 70)

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An 8" oil line of the Standard Oil Company of New Jersey.

Victaulic Flexible Leaktite Pipe Joints Are Strong

How VICTAULIC *Joints Function*

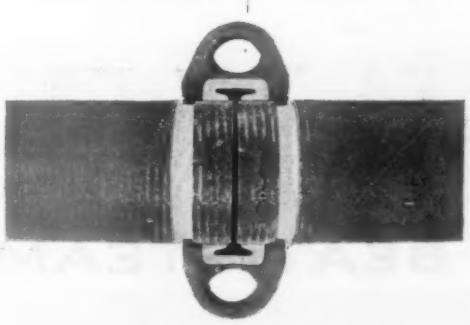
The patent Victaulic Joint consists of two half housings, two bolts and leakproof ring.

The half housings serve to center the leakproof ring over the ends of the pipes and also join the pipes together.

Such clearances as are necessary to obtain flexibility and expansion are allowed.

The whole operation—placing the leakproof ring over the pipe end, putting the housings in place and bolting them together is easily done in two minutes on any size pipe up to 12" diameter.

Standard pipes are grooved at the ends to the average depth of a screw thread. The shoulder of the housing engages in the groove and supports the pipe under strain.



The pipe will bend before a Victaulic Joint will let go. No other joint will stand more abuse and stay tight.

Victaulic Joints are so flexible that even under pressure a five degree deflection causes no weakening or leakage.

Victaulic Joints can be put together by unskilled labor in less than half the time required by threaded pipe or caulked pipe—an important saving in both time and money.

Victaulic Joints stay tight even when laid over rough, undulating ground or where vibration or ground movement occurs.

One engineer reports:

> "We have more than ten miles of pipes with Victaulic Joints, from 2" to 10" and in no single instance can we find a leaky joint—we had 6 to 8 men constantly working at the joints on our different pipe ranges—this is now entirely changed and it is a pleasure to walk along the ranges and find them absolutely leakless."

All Victaulic Joints for a particular size and type of piping are interchangeable. Standards have been arranged so that Victaulic Joints will fit any make of piping.

Victaulic Joints are made to meet all pressures—low, medium or high—in sizes from 1" up.

Other economies from the use of Victaulic Joints include a great saving in shipping and maintenance costs. Different sized pipes can be safely nested—saving shipping space. Any length of pipe can be removed from a line quickly and without disturbing any other length.

For detailed information write today for Victaulic Bulletin No. 1 which will gladly be sent, together with specifications to suit any conditions.

VICTAULIC COMPANY OF AMERICA
26 Broadway New York

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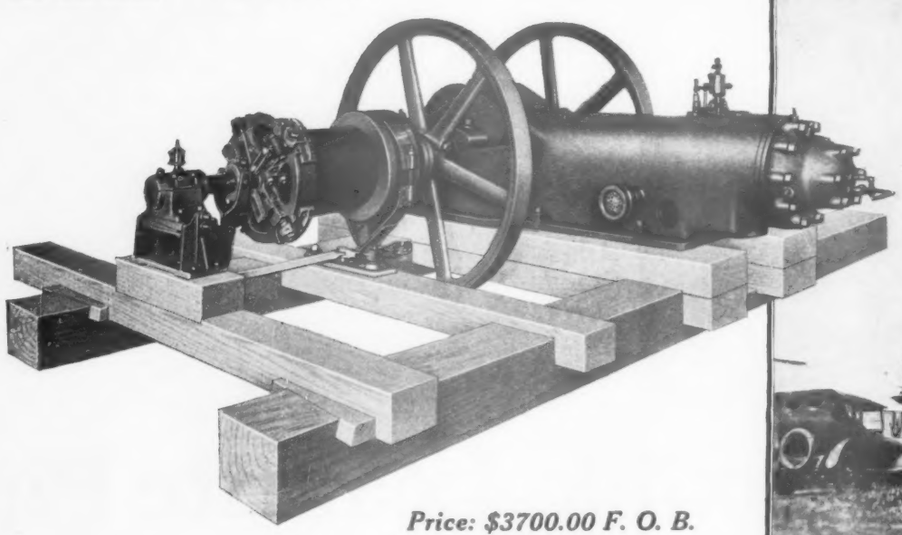
REG. U. S. PAT. OFF.
LEAKTITE AND FLEXIBLE JOINTS

OIL DRILLING ENGINE



Price: $3700.00 F. O. B. Factory

What Brings the Steam Users Around to Franklin Valveless?

If you can show a driller or contractor that your power plant will drill more hole at a lower cost and with less trouble, he's "sold." And that's exactly what Franklin Valveless Oil and Gas Engines are doing in the Mid-Continent and Eastern fields, where steam, until recently, was the prime favorite.

But considering the steam engine's dependence upon a good and cheap water supply, the difficulties of transporting so much dead weight and its enormous fuel consumption, it is easy to see why the advantages of Franklin Valveless Engines interested the contractor and operator.

Extreme Simplicity of Construction

The Franklin Valveless Oil Engine is a single cylinder, three-part, two-cycle engine, with the fewest possible number of moving parts. All bearings and gears run in a bath of oil, and while fully protected from sand and grit, are easily accessible. The Franklin lubricating system is the most efficient known. An inexperienced crew can set up and operate a Franklin Valveless without trouble or delay.

Adaptable to Any Fuel Conditions

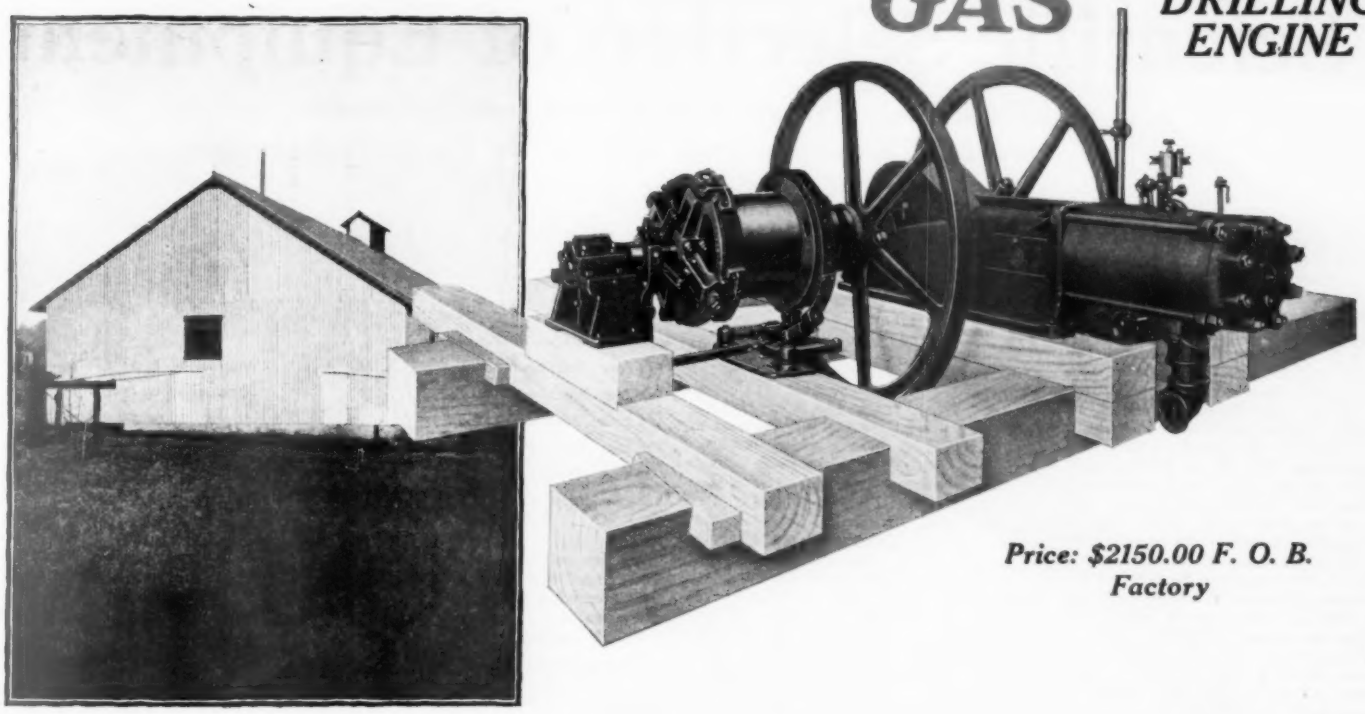
If the owner of a Franklin Valveless Oil Engine goes into a field where gas is cheap, he can convert his oil engine into a gas engine in two hours—simply by changing cylinder heads and replacing fuel pump with magneto.

Lowest Operation and Maintenance Costs

The fuel bill for a Franklin Valveless is actually less than that for a Ford automobile! Average fuel consumption for drilling is approximately 1½ gals. of 8c fuel oil per hour. Lubricating costs and repair bills are cut to a minimum—many Franklin Valveless engines have drilled from 10 to 30 wells without costing their owners one cent for repairs. As for water—100 barrels will cool the engine and mix mud for approximately 1000 feet of hole. No wonder Franklin Valveless users say they are saving from $20.00 per day and up using this dependable, economical drilling engine!

FRANKLIN VALVE

THEY BEAT STEAM



GAS DRILLING ENGINE

Price: $2150.00 F. O. B. Factory

Change From Driller to Pumper on the Same Block

While the Franklin Valveless Gas Engine is like the oil engine in principle, it has one more big advantage—that of interchangeability. When drilling is completed you can leave this engine on the block for pumping or replace it with one of less horse power without changing a single bolt on the original foundation. This feature warrants the building of the most satisfactory engine foundation—concrete.

Service

Even though Franklin Valveless Engines can be set up and operated successfully by an inexperienced crew, our distributors will furnish, upon request, a factory mechanical expert to demonstrate and assist in the economic use of these power plants.

Prices

Complete with self-oiling reversible drilling clutch, circulating pump and fuel tank.

FOR MID-CONTINENT AND WESTERN DRILLING SERVICE

Oil—$3,350 and $3,700 Gas—$1,725 and $2,150

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FRANKLIN VALVELESS ENGINE CO.

Franklin, Penna.

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Muskogee, Okla., and Branches

New Martinsville Supply Co.,
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Bradford Sales Company
Bradford, Penna.

Washington Engine & Pump Company
Washington, Penna.

International Supply Company
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Wooster Tool & Supply Company
Wooster, Ohio

Atha Supply Company
Zanesville, Ohio

McEwen Brothers
Bolivar, N. Y.

American Tank Co. of Colorado
Casper, Wyoming

LESS ENGINES

AT EVERY TURN

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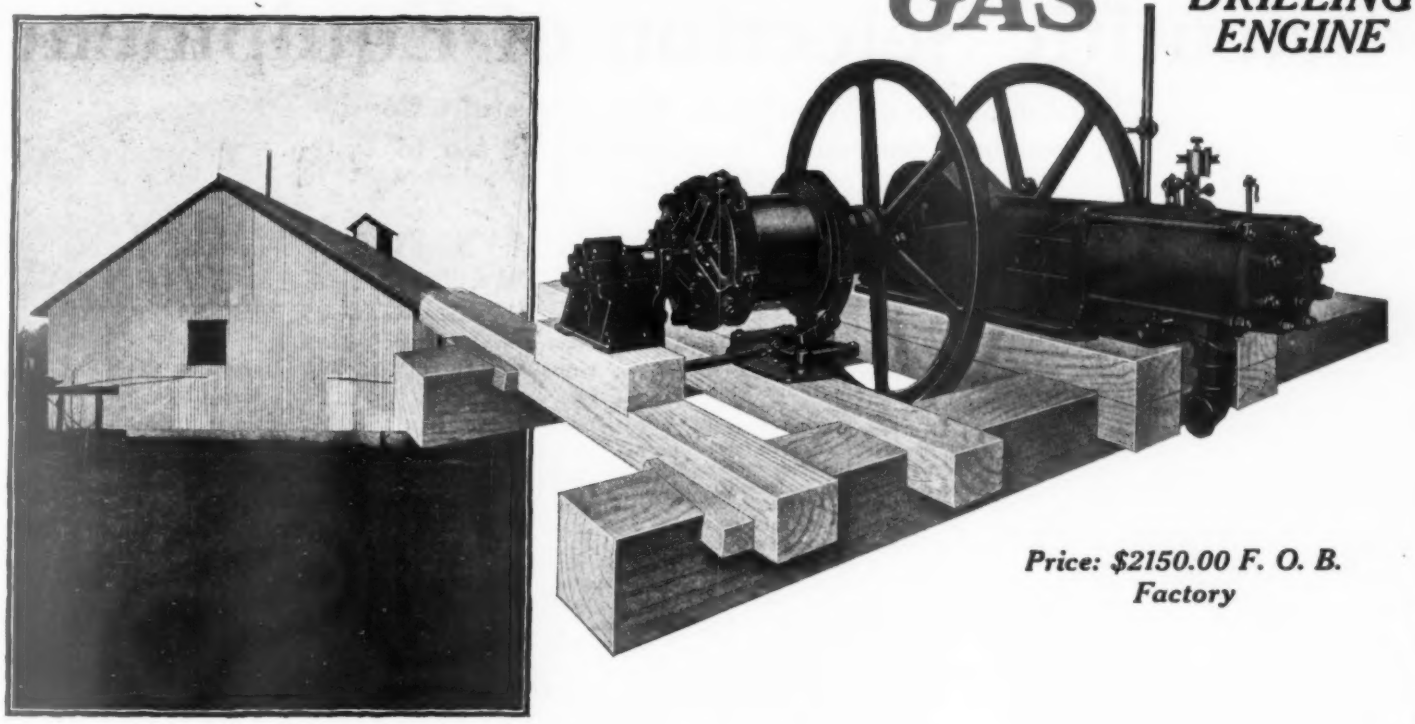

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LESS ENGINES

AT EVERY TURN

Scientific Selection of Equipment

Elimination of Waste Now Being Carefully Considered by Companies That Seek to Be Up to Date

Glenver McConnell*
Roxana Petroleum Corp.

I feel a little like Will Rogers in that all I know I get from specialty salesmen.

Waste elimination by careful selection of equipment is now being considered very seriously by all companies that try to be up-to-date. In trying to corral my thoughts for this occasion, I do not believe any company that I know of has really been able to effect a real scientific system in the selection of equipment. It is a subject that is really more important than is generally realized by many who have grown up with the oil business and who have not much technical knowledge. We often hear rather disrespectful remarks on the purchasing agent, who is said to make a lot of errors in purchasing much equipment at excessive costs and not of particular use. So far as that is concerned, I believe the practical man in the field and even many executives make just as grave mistakes as do the purchasing agents. As Mr. Porter has said, one should proceed cautiously but sometimes we cannot do that when we must meet a situation in haste.

Now, we should expect a great elimination of waste by proper selection of equipment. Readiness is an occasion for real successes in any endeavor. If we can always be ready, we certainly should succeed more profitably and eliminate a great deal of waste. In order to do this we will aim at standardization. We should aim to collect date: Engineering data, field data, cost data. We should aim to have at hand very careful analyses of facts and base our selection from them.

The petroleum industry at the present time is developing a good procedure, trying to improve its machinery and equipment and the system of handling its product. To do this is to effect proper mechanization of the industry and we must give the engineer a chance to work, a place where he can work in a free manner. We must help him with all the records which are available for his use. He should be given every privilege to do his experimenting in advance. Much of this is experimenting. This means also long in advance of the time you are going to use the improved equipment.

Systematizing in the Office

Systematizing in the office as well as co-ordinating systems adopted in the field is a great advantage. Finally all of these things will lead to an endeavor along lines of research. There are many things which the engineer will have to dig out because much information is not available.

This merely outlines the procedure of establishing a more scientific method for selecting equipment. In order to not take up much time, I would just like to give you some interesting results and some personal experiences. We all appreciate what the American Petroleum Institute has done on standardization and what they have been trying to accomplish for us. We have every reason to believe that the results will be of great benefit to all. We must not, however, form the opinion that the standardization that the A. P. I. is accomplishing will be a cure-all. We will always be obliged to do standardization work for our individual companies to fit into the plans that are distinctly individual. Too often we base our conclusions upon trials of various articles in the field. This I find leads to very conflicting results. Very often it is impossible to do this satisfactorily. You would not select a derrick, for instance, to be based on trial. You have a $75,000 investment ahead of you and you could not afford to send out a derrick on trial. But that is what virtually a lot of folks are doing.

To Derrick a Well

In considering the subject of the derrick, we consider what would be a safe load. The wind resistance of various derricks, the size in the opening at the top and dimensions of the portals and various members of the derrick are all considered. You are very much interested in the weight of the members used, the size of the members, the construction features, and in the second place the pride consideration enters the price of various derricks delivered at certain points, cost of hauling, based on various weights, cost to erect, cost to dismantle, cost of service while drilling is going on. You are now in position to determine beforehand approximately what the dry hole cost would be by using various types of derricks which you are considering. You will further be more able to determine what the final cost would be to derrick a well that becomes a producer by using any of these various derricks you are considering. To derrick a well that becomes a producer—there are three systems to consider. First the dual system where the original derrick is removed and a new one installed. Second, the releg derrick idea where the relegs are stripped off and a more lightly constructed affair is left over the well for pumping. The third, a substantially built derrick where nothing is removed and you leave the same for pumping as for drilling. All of these three methods may be economically possible, depending upon the type of constructed derrick you are purchasing. If you set these figures up, you are able to determine beforehand pretty definitely what kind of a derrick is best to adopt for general purposes.

Maximum Wind Loads that Unguyed Derricks Will Withstand

Size	Description	Wind Velocity	Load Reduction at 35 miles per hour
84 feet	Nailed Wood, extra heavy (winter rig)	40 mi per hr.	21,696 lb.
114 feet	Nailed Wood, lightly constructed (winter)	33 mi. per hr.	53,072 lb.
122 feet	Nailed Wood, extra heavy (winter)	44 mi. per hr.	60,592 lb.
84 feet	Turnbuckle Type (winter)	approx. 34 to 44 mi. per hr.	16,000 lb.
122 feet	Turnbuckle Type (winter)	approx. 45 to 50 mi. per hr.	25,000 lb.
84 feet	Tube Steel Type (winter)	approx. 80 to 120 mi. per hr.	10,000 lb.
122 feet	Tube Stell Type (winter)	approx. 65 to 120 mi. per hr.	17,000 lb.
84 feet	Structural Steel Type (winter)	87 mi. per hr.	13,000 lb.
122 feet	Structural Steel Type (winter)	92 mi. per hr.	23,700 lb.

Strength of Derrick

Before leaving the subject of the derrick, I might say that in calculating the strength of the derrick, it is often done hastily by just considering the columnar strength of the leg members. There should be much more consideration than this. Other members are very important and the loading conditions which the derrick can be used for must be considered. Anchorage to good footings must be well considered. Calculating derrick strengths in a haphazard manner will lead to erroneous results. The wind resistance should be thoroughly considered.

Proper guying materially increases the strength of a derrick against overturning. But I would prefer a derrick that would stand high wind velocities without any guying if possible.

Wire Lines

A big item of expense is for wire lines. In selecting wire lines I might say there are two ways to judge their quality for oil field purposes:

1. By accurate field records.
2. By thorough technical examination of all various lines considered.

The technical examination of wire line may be said to cover 11 important items. They are as follows:

1. Diameter—1/32" above nominal to 1/16".
2. Length of lay—5¼" to 6", not more or less.
3. Percentage of Load Elongation Under—
   .25 % at 5,000 lb.)
   .41½ % at 10,000 lb.) Regardless
   .72 % at 15,000 lb.) of grade of
   .95½ % at 20,000 lb.) steel
   1.24 % at 30,000 lb.)
4. Tensile strength C.C.S. 50,000 lb., M.P. 55,000 lb.
5. Chemical Analyses—Specified limits omitted.
6. Core Impressions.
7. Core Hardness.
8. Core Material.
9. Core Preservation impregnation.
10. Solubility Test of Core Preservation.
11. Test for Construction and strand closure.

As all 11 points are given certain relative values the total, we will say, is 100 per cent. If a line passes a grade of 75 per cent, it is considered a good line. By using this, we find that a technical examination checks very closely with field records. I was very much surprised to see how closely the two methods checked. We are therefore able to judge wire lines before sending them out, which is really a much more desirable method.

I might say that careful selection and use of wire lines will enable us to save $48,000 a year on drilling lines alone, based on the purchase of 12 lines per month. That is from actual records.

Belting

Belting is a big item of expense. From records of over a year very carefully kept, we find that belts on wells between 3,500 and 4,500-foot depths are costing us from $1.15 per belt per day to $2 per belt per day, depending on the belt used. Now if we did not have these records, we might purchase belts costing us $2 per day, but by having these records we are able to purchase belts not costing over $1.15 and we hope to be able to cut this down to a much lower figure.

Tug Ropes

Tug ropes—this is an often overlooked item of great expense. In considering the quality of hemp and ropes, we must know something about how to determine manila hemp from various others. Unfortunately, this is very difficult to do. The industry needs to have more information on this subject and I am confi-

(Continued on Page 162)

*Before Mid-Continent Section, American Society of Mechanical Engineers.

NO GENERAL METHOD FOR TREATING OF LIGHT OILS AND DISTILLATES

By E. R. Wiles*
Barnsdall Refining Co.

There can be no general method given for the treating of light oils and distillates, due to the fact that all distillates differ from each other so greatly. You may have a light colored distillate or one dark in color, high or low sulphur, and even variance in Baume gravity may have a great effect on the way we will have to handle our distillate in treating it. Then again we may require some special characteristic of our finished oil. We may require a particular color or doctor reaction; we may require corrosion test or particular stability to sunlight or modified light. Also may require particularly low gum formers in some instances, so we see that with each type of material and each type of finished material, it required that type of treating to attain that color, etc. So we have tried to touch only the high spots on the subject of treating.

We will try to enumerate the more common methods of treating under subjects, such as the treatment with acid, with alkali, solution of red oxide, sodium plumbic, sulphur dioxide, distillation, inner absorbents, etc. We may have a combination of several of these.

Treatment with acid is quite often resorted to particularly in refractory distillates and quite largely in the treatment of kerosene. It is not necessary that they be refractory to use acid but acid seems particularly effective on refractory distillates.

Treatment is carried out either in continuous or batch systems. The continuous system, of course, is the more modern method and saves considerable losses, particularly in gasoline treating. However, the batch system is sometimes used and I saw not so long ago one being used very successfully. Usually 66 sulphuric acid is used, although sometimes 98 to 100 per cent acid is used and in other cases more dilute acids are wanted to eliminate the heat effects, due to the reaction of the sulphuric acids.

The treatment is mainly for the reduction of gum forming compounds, improves color, and reduces the unsaturated contents very considerably. Just in that line, we used to consider that the unsaturates were very unfortunate and we attributed all sorts of trouble to them. In the light of recent research, we found that most of the troubles were imaginary and that the unsaturates constitute one of the most valuable parts of gasoline, so it is very desirable not to remove these compounds, where before we considered it necessary to do so.

Acid Treatment

The acid treatment does various other things. Sludges formed from light oil treating are not so difficult to handle as the heavier, but not very pleasant to be around. Also, some oil solvent compounds enter into solution with the oil, which sometimes give considerable trouble. They may form emulsions, particularly true in mineral seal oils, or oils of that character. Also, the treating with acid usually necessitates some further treatment to remove the acid. It also entails considerable loss.

We have a method of treating by hydrogen chloride and by the use of chlorine in solution, usually with some carrier, such as caustic soda. Also the method

(Continued on Page 160)

*Before Mid-Continent Section, American Society of Mechanical Engineers.

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Lowering of Differentials Justified

Refiners Agree 8 Cents for Each Crude Gravity Unwarranted Under Present Conditions. Low Gasoline Prices Factor

By C. O. Willson

On November 1, the Humble Oil & Refining Co. in announcing a general reduction in its posted crude schedules in north and central Texas gave as part explanation of its action that "refinery experience supported by numerous laboratory tests on crude of different gravities over a long period indicate to us that a 5-cent differential per degree of gravity much more nearly reflects the relative value of light crude on today's market for petroleum products than the 8-cent differential previously in effect." As a result of this action, posted prices were reduced on a graduated scale starting at 15 cents for the lowest gravity and increasing uniformly for each degree of gravity, with a maximum reduction of 87 cents for the top schedule of 52 and above.

This same schedule has since been put into effect in Oklahoma and Kansas by the Carter Oil Co. and two other major purchasing companies with a similar schedule in effect by the large buyers in North Louisiana and Arkansas. However, at this writing there were still several major buyers, including the Prairie Oil & Gas Co., Sinclair Crude Oil Purchasing Co. and a large number of smaller purchasers, who had not changed their schedules which provide for the 8-cent differential.

Considered strictly from the standpoint of the refinery operating in the field, it can be said that the Humble's action in reducing the 8-cent gravity differential has the approval of practically every Mid-Continent operator. This is especially true of the refiner whose plant operates with high gravity crude, as most of them do. These operators may not believe that the 5-cent differential was the one which should be adopted, but all will agree that the 8-cent differential did not accurately reflect the relative value of the different gravity crudes based on manufacturing costs and realizations.

Ever since the 25 grade schedule, which was generally effective in Oklahoma, Kansas and north and central Texas until November 1, became effective on February 1, complaints have been voiced by refiners who were operating on the high gravity crudes. This situation was reflected in the fact that among the operating refineries in the field the greatest demand has been for the low gravity crudes.

Past Developments

Before discussing the present crude schedules in relation to their value as determined by refinery operation, a brief review of past conditions is necessary. The first crude schedule based on gravity in the Mid-Continent Field was posted on November 22, 1922, by the Prairie Oil & Gas Co. Previous to that time the major buyers purchased on a flat basis for practically all grades of crude. However, the smaller buyers—generally the refiners operating in the field—had been purchasing their crude on a basis which in effect was a modified form of a gravity scale schedule. These refiners paid premiums for their crude supplies—the higher the gravity the greater the premium.

This competition finally forced the Prairie and other large purchasers to post schedules based on gravity. The first schedule started with a grade "Below 28" at 90 cents, with a top price of $1.80 for "39 and above." A schedule was posted for each 2 degrees, resulting in a price differential of 8 2/11 cents for each degree.

Since that time there have been numerous changes in prices and schedules, but the large buyers have never returned to a flat basis for the Mid-Continent Field as a whole. During the overproduction period late in 1923 the large buyers did reduce their price schedules on a three-grade basis. This situation stopped only temporarily the general trend which has been to post more and more grades. This trend on February 1 of this year culminated in the posting of 25 grades in Kansas, Oklahoma and north and central Texas, a price being established for each gravity from 28 to 52 and above.

The differential for each degree of gravity has varied a little from time to time, but, except for the overproduction periods, 8 cents has approximated the differential in effect. This meant that under normal conditions the major buyers believed that each degree of gravity added 8 cents to the value of the crude produced in the states just mentioned.

Unquestionably, this method of purchase was fairer to both the buyer and seller than the old flat rate basis. The producer of the higher gravity grades secured more for his product, and up to a few months ago little complaint was heard from the refiners who purchased it.

The present attitude on the part of the buyers can be explained as a development of changes both in the marketing of refined products and methods of manufacture. Regardless of the outcome of the present controversy, in which there is an obvious difference of opinion as to the crude schedules which should be put into effect, it is practically certain that in the near future these changed conditions in refining will result in a price adjustment in which there will be a lowering of gravity differentials.

The changes in marketing conditions will be considered first. Everybody who keeps in touch with market developments knows that the outstanding development this year has been the relatively low gasoline prices received by the refiner and the relatively high prices prevailing for other products classed as kerosene, distillates, gas oils and fuel oils. This situation has been explained from time to time in previous articles appearing in The Oil and Gas Journal.

Crude prices have averaged from 10 to 20 per cent higher than last year, while the average gasoline tank car price at the refineries has been practically the same for the two years. In fact, average gasoline prices this year have been about the same as in 1924 when crude prices were even lower than in 1925. This is reflected in comparative data which show that during 1924 in Oklahoma the average per gallon price of 36 degree gravity crude was 42.2 per cent of the tank car price on U. S. Motor gasoline, 43.3 per cent in 1925 and 51.3 per cent of the gasoline price which prevailed from May 15 to November 1 of this year.

If the same comparison is made in regard to other products the data will show that the trend in general in regard to kerosene, distillates, gas and fuel oil prices has been upward for the three-year period. Kerosene prices, for example, at Mid-Continent refineries this year have averaged approximately 60 per cent more than last year.

Importance of Cracking

It will probably be pointed out by some that while gasoline prices in relation to crude schedules are constantly getting lower the percentage of gasoline recovery from crude is steadily gaining and for that reason gasoline is increasing rather than decreasing in importance as a product from crude. This is true. However, this increased importance is not due to the gravity of the crude.

The larger gasoline yields in the Mid-Continent and other parts of the country are largely due to the rapidly increasing number of cracking installations. In the Mid-Continent all but one-fourth of the smaller refineries have one or more cracking units in operation so that at present the cracking capacity for the entire field is about 50 per cent of the crude skimming capacity.

The amount of gasoline obtainable from a cracking stock has little to do with the gravity of the crude from which it was obtained. This stock is obtained after the gasoline fractions and usually the kerosene cut have been removed by the skimming operation. In fact since the high gravity crudes have from 30 to 50 per cent light ends which must be removed by skimming, the lower gravities usually furnish the greatest percentage of cracking stock.

Confined to Skimming

Considering this manufacturing condition in relation to the value of crude oil it is obvious that so far as the art of cracking is concerned gravity is not a basis on which crude prices should be determined. Gravity as a price factor is confined to the skimming operation.

Gasoline yields from skimming operations have increased slightly in recent years due to the more efficient fractionating equipment and to that extent this additional yield has added to the value of the crudes from which it was obtained. However this increased recovery is of minor importance when the other factor previously mentioned—the constant lowering of gasoline prices in relation to crude—is considered. This latter market development has meant that crudes so far as gasoline secured from skimming is concerned are worth less than formerly.

The fact that prices on kerosenes, distillates, gas oils and fuel oils were rela-

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Table showing the relative value of representative high and low gravity crudes in the Mid-Continent Field based on new and old schedules as determined from refinery skimming operations and combined skimming and cracking operations:

	Skimming Operation				Skimming and Cracking		
Products	% Yield	Gallons	Price Per Gallon	Total Return	% Yield	Gallons	Total Return
Gasoline	25.0	10.5	.0975	$1.024	39.1	16.42	$1.60
Kerosene	6.0	2.52	.0675	.169	6.	2.52	.169
Gas Oil	30.0	12.6	.0425	.535			
Fuel Oil	35.8	15.04	.0325	.489	48.7	20.45	
Loss	3.2	1.34			6.2	2.61	.665
Total	100.0	42		$2.217	100.	42.	$2.434
Total return minus crude price at well (Prairie)				.247			.464
Total return minus crude price at well (Carter)				.467			.684
*Greenwood (Kans.) Pool 40 gravity.							
	Skimming Operation				Skim. and Crack Oper.		
Gasoline	37.0	15.54	.0975	$1.514	51.1	21.45	$2.091
Kerosene	6.0	2.52	.0675	.169	6.0	2.52	.169
Gas Oil	30.0	12.6	.0425	.535			
Fuel Oil	23.5	9.87	.0325	.321	36.4	15.3	
Loss	1.47	6.5			6.5	2.73	.497
Total	100.	42.		$2.539	100.	42.	$2.757
Total return minus crude price at well. (Prairie)				061			.157
Total return minus crude price at well. (Carter)				.439			.657
*Prairie Oil & Gas Co. schedule—32 gravity $1.97; 40 gravity $2.60.							
*Carter Oil Co. schedule—32 gravity $1.75; 40 gravity $2.10.							
*Augusta, Kans. crude 32 gravity.							

WORLD CRUDE OIL PRODUCTION FOR 1926 GIVEN AS 1,071,330,000 BARRELS

By Valentin R. Garfias

Manager, Foreign Oil Department, Henry L. Doherty & Co.

The world's production of petroleum during 1926 is estimated at 1,071,000,000 bbls., showing practically no change from that of the previous year, and being but slightly larger than the average during the last four years, which is close to 1,042,000,000 bbls. The daily average during the year may be estimated at 2,940,000, of which the United States produced 2,080,000, and other countries 860,000 bbls.

The outstanding developments during the year have been the decline of the Mexican fields, the counterbalancing of this decline by the increase in the Venezuelan and Russian production, and the similar offsetting of probable minor declines in the outputs of the United States and Persia by the increases in Rumania and Colombia.

Venezuela Shows Gain

During the present year the United States, Mexico and Russia retain their relative positions as the three leading producers, while Venezuela outranked Persia for fourth place, Rumania passed Dutch East Indies for sixth, and Colombia moved from the sixteenth to thirteenth position. It further appears that should present conditions develop normally throughout 1927, it is not unlikely that the existing difference between the Russian and Mexican productions will be materially diminished by the end of the year and that the increased yield of Colombia will place this country in ninth position and ahead of India.

The United States and Mexico should produce in 1926 about 79 per cent, and the aggregate of the seven leading countries should be close to 95 per cent of the total. It is interesting to note that about 85 per cent of the total comes from fields in the American Continent, the United States accounting for about 71 per cent, and Spanish-American countries and Trinidad for 14 per cent .

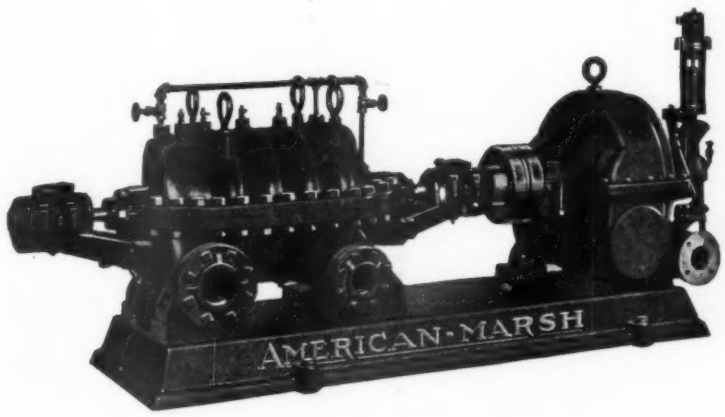
The production of countries other than the United States and Mexico has gradually increased during the last four years and now represents about 21 per cent of the total.

Lead Still Held Here

The United States easily retains its long standing leadership with a total yield of 750,000,000 bbls., or an average daily yield of 2,080,000 bbls,, representing slightly under 71 per cent of the total, these figures being practically equal to those of the previous year. A decline of only some 6,000,000 bbls. is indicated by some of the statistics so far available. It will be noted that the American production in the last four years has averaged about 741,000,000 bbls. yearly and that this uniformity, as well as the marked increases of the previous years, have been sharply reflected in the corresponding world's total yearly output.

The crude and refined oils available in the United States in each year from 1920 to 1925 exceeded the demand. This resulted in the accumulation in storage of an additional surplus during the last six years, estimated at 340,000,000 bbls. The

(Continued on Page 92)



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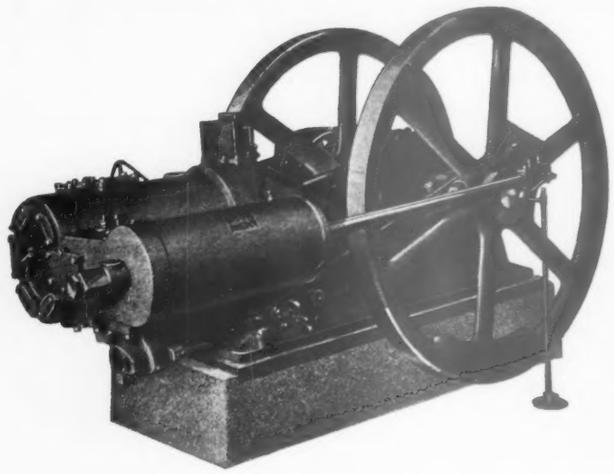

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TRADE-MARKS DISTURB MARKET SITUATION

(Continued from Page 29)

line derived by use of the process caused some doubt as to licensing at all and it was to protect the territory against the effect of a flood of gasoline. The provision went through several stages in its handling by the company's directors.

The first licenses were drawn for a short period of two years and contained this provision. Then when the licenses ran out and came up for renewal, the board was less alarmed by the prospect of a gasoline flood into the district, but put into the renewals a provision which enabled the company to have an option in case it was desired to cancel the agreement in event that too much cracked gasoline came into the territory.

Subsequently, after the present regime came into the Indiana company, Colonel Stewart stated that the policy of licensing to anyone interested was adopted and an invitation extended to the Western Petroleum Refiners Association members.

"I got hold of the Western Petroleum Refiners Association and its representatives," he said, "and told them to come in, that the water was fine, and anybody wanting a license could have it; and at that time that applied to people that were doing business in our territory, to whom it would have been silly to have said they could not manufacture and introduce it in our territory. So at that time this territorial provision was practically lost sight of and did not go into the contracts at all."

The restrictive provision in the licensing contracts, Colonel Stewart explained, had several gradations. The company never had any doubt as to its legal right to insert such provisions, he said, but even in cases where licensees shipped cracked gasoline from Burton stills into the Indiana territory the company never invoked the territorial restriction in any way.

WHEN THE CUSHING FIELD DOMINATED INDUSTRY

(Continued from Page 32)

care of a large proportion of it. Later the McMan Oil Co. sold out all of its holdings to the Magnolia Petroleum Co. for $36,000,000 and John H. Markham, Jr., sold to the Carter Oil Co. at a price that put him well up in the multi-millionaire class.

Corporation Commission Steps In

When the ancient law of supply and demand became effective in the spring of 1914, and the Prairie Oil & Gas Co. began lopping off the price in the face of the rapidly rising tide of crude and the inability of the Prairie, Gulf and Texas Pipe Line Companies to handle it, the big trouble began. Red hot mass meetings were held in Bartlesville, Okmulgee, Healdton and Tulsa and fiery and condemnatory resolutions were passed. Producers and their legal counsel wore paths between their home towns and Washington and Oklahoma City. The Conservation Commission stepped in. Its members knew little about the oil business but they wanted to please a majority and made a ruling arbitrarily fixing a minimum price of 65 cents per barrel on Oklahoma crude. It came just at a time when a firm of brokers tendered 1,000,000 bbls. of oil to the Prairie Pipe Line for shipment to a large eastern refiner. The Prairie notified the Conservation Commission that it would not pay 65 cents for oil and promptly cut off all its Oklahoma connections and began moving the 1,000,000-bbl. tender shipment east. Deprived of all market for their oil Oklahoma producers were in a panic and they fell upon the commission which got out of the situation gracefully, whereupon the Prairie re-connected with producers' tanks and resumed operations at its posted price.

Much of this time Cushing was under one or two umpires. A. E. Watts was the first umpire appointed. Later Frank Breene was made umpire in the north end of the field and Watts in the south end. They decided on proration of runs, drilling in of wells and many other disputed points. Their job was no sinecure.

By September, 1914, in which month the field produced an average of 171,500 bbls. a day a compilation of production by company was made in The Oil and Gas Journal of September 17, showing that out of a total of 158,850 bbls. from 304 wells, White & Sinclair produced 30,900 bbls. from 56 wells; Prairie Oil & Gas Co., 16,100 bbls. from 47 wells; McMan Oil Co., 16,000 bbls. from 19 wells; Gypsy Oil Co., 15,100 bbls. from 23 wells; Gunsberg & Forman, 10,500 bbls. from 21 wells; Devonian Oil Co., 8,300 bbls. from 13 wells. Those named were the largest producers at the time. The total production did not include 12,000 bbls. a day produced from the Layton sand, which brought the daily production up to 170,850 bbls. At the same time there was a total of 10,211,146 bbls. held in storage in the field including 9,213,796 bbls. in steel tanks; 172,700 bbls. in earthen storage and 824,000 bbls. held in wooden tanks.

Prairie Led in May, 1915

In the following May (1915), out of a total daily production of 232,000 bbls., the Prairie Oil & Gas Co. was credited with 34,500 bbls.; the McMan Oil Co. with 33,000 bbls.; White & Sinclair interests, 21,000 bbls.; Gunsberg & Forman, 15,000 bbls.; B. B. Jones, 15,800 bbls.; Producers Oil Co. (The Texas Company), 15,000 bbls. Crude stocks in the field had by that time climbed to 32,268,700 bbls. of which the Prairie Oil & Gas Co. owned 8,104,200 bbls. and the Carter Oil Co. 5,375,000 bbls. Gunsberg & Forman held over 2,000,000 bbls. of their own production and C. B. Shaffer owned 1,000,000 bbls. in steel tanks. The McMan Oil Co., Producers Oil Co. and Quaker Oil & Gas Co., each had between 2,000,000 and 3,000,000 bbls. in storage. By that time decreasing gas pressure and water intrusion had begun to make serious inroads on production, which in April, 1915, had reached a peak of over 300,000 bbls. By this time, however, the Tucker sand had been discovered in the north end of the Cushing Field and in June the production of several companies took a decided upward trend. C. B. Shaffer's production jumped from 8,000 to 14,900 bbls.; the Mid-Co Petroleum Co., from 7,500 to 16,000 bbls.; Tom Slick, from 10,000 to 25,000 bbls.; Carter Oil Co., from 7,000 to 10,000 bbls. and total Cushing production shot up to 285,000 bbls. a day. Continued water troubles, however, caused a drop in the production almost daily notwithstanding many wells of good initial production were brought in. While the field produced an average of 266,750 bbls. in June, it fell to 204,000 bbls. in July, and to 181,250 bbls. in August, continuing on down until it fell below the 100,000-bbl. mark at the close of the year.

Meanwhile, the 40-cent price for crude continued to prevail until August 2, 1915, when it was advanced to 50 cents; August 11, 60 cents; August 19, 65 cents; September 11, 80 cents; October 13, 90 cents; November 13 to the magic dollar mark. It leaped to $1.20 on December 14, and closed the year at that figure. The fast falling production of Cushing, an increased demand for crude and increased pipeline facilities which made for more competition were responsible for the upward trend of the crude market.

The glut of Cushing oil was a thing of the past and the field settled down by degrees, its tranquility being interrupted now and then with a sensational well. All the animosities were sidetracked in the hunt for new pools in the face of the rising market and never since the wild and warlike days of Cushing have the crude buyers and the pipelines on the one side and the producers on the other had occasion to lock horns.

The wise action of all parties concerned in getting together on wise ways and means to handle the Seminole situation has averted the possibility of state governmental interference in the development of the new field, and to the credit of the State officials making up the Conservation Commission it must be said that they seemed as anxious that the oil men settle their own difficulties as the oil men were themselves

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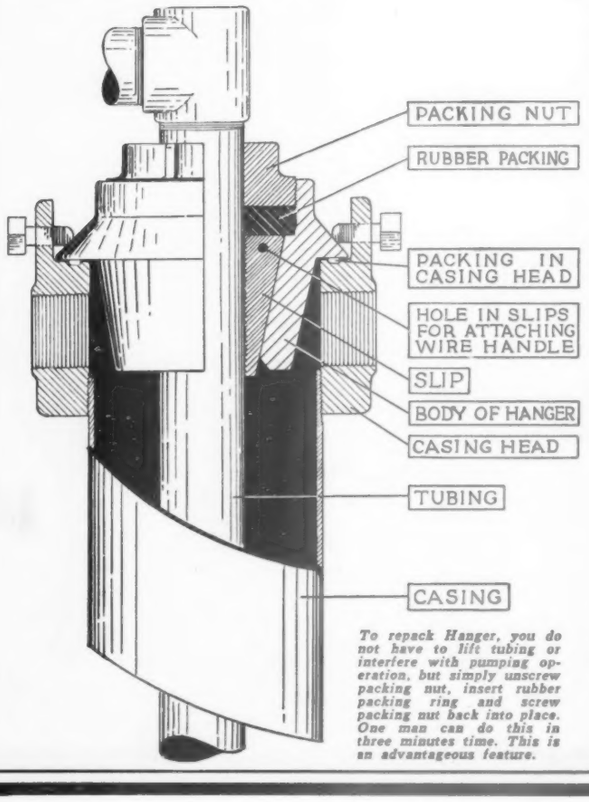

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REFINERS INCREASE RUNS TO STILLS

(Continued from Page 31)

MID-CONTINENT REFINERY OPERATIONS

Table No. 1

(Based on plants November 1, 1926, and October 1, 1926)

	*No. Plants Nov. 1	Crude Capy. (Bbls.)	Cracking Capy. (Bbls.)	Plants Operat'g Nov. 1	Runs to Stills Nov. 1 (Bbls.)	Plants Operat'g Oct. 1	Runs to Stills Oct. 1 (Bbls.)	Daily Increase Nov. 1
Oklahoma	51	263,500	93,550	47	177,250	49	173,850	3,400
North Central Texas	40	172,900	49,450	34	92,425	32	88,525	3,900
†Kansas	19	123,000	56,600	18	83,950	17	83,150	800
N. Louisiana	5	50,000	16,000	4	42,100	4	40,100	2,000
Arkansas	10	32,000	12,600	8	21,850	8	23,350	‡1,500
Total	125	641,400	228,200	111	417,575	110	408,975	8,600

*Does not include plants which have been shut down one year or longer. †Includes one Missouri plant. ‡Decrease.

Table No. 2

(Based on plants November 1, 1926, and November 1, 1925)

	*No. Plants Nov. 1 1925	Crude Capacity November 1, 1925 (Bbls.)	Plants Operat'g Nov. 1, 1925	Runs to Stills November 1, 1925 (Bbls.)	Daily Increase Nov. 1, 1926
Oklahoma	58	268,000	48	170,550	6,700
North Central Texas	46	177,100	38	85,625	6,800
†Kansas	26	129,900	18	80,800	3,150
North Louisiana	6	37,500	6	30,300	11,800
Arkansas	11	33,500	10	15,950	5,900
Total	147	646,000	120	383,225	34,350

*Does not include plants which had been shut down one year or longer.
†Includes two Missouri plants.

REFINING OPERATIONS IN NORTH CENTRAL TEXAS

(Plants which have been in operation during the past year.)

Name and location—	Daily Capacity	Runs November 1	Runs October 1
Amarillo Producers & Refiners Corp.	2,500	1,000	.....
Amarillo Refining Co., Amarillo	5,000	3,500	3,000
American Refining Co., Wichita Falls	7,000	4,400	3,800
Buffalo Refining Co., Sherman	500	Shut down	Shut down
Col-Tex Refining Co., Colorado	7,500	5,000	6,000
Continental Oil Co. (Texhoma) Wichita Falls	7,000	4,500	4,800
Crystal Petroleum Co., Burkburnett	1,000	Shut down	Shut down
Dale Oil & Refining Co., Electra	3,000	2,450	2,200
Falls Refining Co., Wichita Falls	1,500	800	800
Gulf Refining Co., Fort Worth	15,000	6,400	6,400
Hagaman Refining Co., Tiffin	2,000	275	275
Humble Oil & Refining Co., Burkburnett	4,000	1,750	1,750
Iowa Park Producing & Refining Co., Iowa Park	2,500	1,600	1,600
Kent-Middleton Refining Co., Angus	3,000	2,250	2,200
Kent-Middleton Refining Co., Minerva	2,500	1,500	1,350
Magnolia Petroleum Co., Fort Worth	12,000	6,700	6,700
Magnolia Petroleum Co., Corsicana	10,000	2,700	2,700
Megargel Refining Co., Megargel	2,000	600	600
Miller Petroleum Co., Wichita Falls	3,000	2,000	1,300
Noble Oil & Gas Co., Burkburnett	5,000	2,600	2,800
Olney Oil & Refining Co., Olney	1,200	1,100	1,100
Oriental Refining Co., Dallas	6,000	Shut down	Shut down
Oriental Refining Co. (Trinity), Dallas	5,000	2,800	2,800
*Orient Petroleum Co., Wichita Falls	3,000	1,000	1,000
Panhandle Refining Co., Wichita Falls	4,000	3,000	2,250
Paris Refining Co., Paris	250	250	250
The Petroleum Corp., Electra	2,000	Shut down	Shut down
Primrose Refining Co., Wichita Falls	1,500	1,000	1,000
Producers Refining Co., Gainesville	5,000	4,000	4,000
Simms Oil Co. (Clayton), Dallas	4,500	4,000	3,900
Star Refining & Producing Co., Fort Worth	1,800	1,500	Shut down
The Texas Company, Dallas	15,000	9,700	9,700
Tidal Western Refining Co., Burkburnett	3,000	2,100	2,500
Texas Pacific Coal & Oil Co., Fort Worth	6,000	2,300	2,300
Transcontinental Oil Co., Fort Worth	5,000	4,000	4,500
Travis Refining Co., Burkburnett	750	350	350
Waggoner Refining Co., Electra	3,400	2,800	2,800
Western Oil Corp., (Sunshine), Wichita Falls	3,000	Shut down	Shut down
White Eagle Oil & Refining Co., Fort Worth	4,000	2,500	1,800
Wilson Brothers Refining Co., Wichita Falls	2,500	Shut down	Shut down
Total	172,900	92,425	88,525

REFINERY OPERATIONS IN OKLAHOMA

(Plants which have been in operation during the past year.)

Name and location—	Daily Capacity	Runs November 1	Runs October 1
Anderson-Pritchard, Cyril	1,500	1,200	1,200
Barnsdall Refineries, Inc., Barnsdall	5,000	4,000	4,000
Barnsdall Refineries, Inc., Okmulgee	6,000	3,000	2,000
Bell Oil & Gas Co., Grandfield	3,000	2,000	1,500
Bolene Refining Co., Enid	5,000	3,000	3,200
Cameron Refining Co., Ardmore	3,900	3,000	3,000
Canfield Refining Co., Yale	500	100	100
Champlin Refining Co., Enid	16,000	12,000	12,000
Continental Oil Co., Sapulpa	7,000	2,400	2,400
Cushing Refining & Gasoline Co., Blackwell	1,500	1,200	1,200
Cushing Refining & Gasoline Co., Cushing	2,500	1,500	1,200
Empire Refineries, Inc., Cushing	7,000	5,000	5,000
Empire Refineries, Inc., Okmulgee	3,000	3,000	3,000
Empire Refineries, Inc., Ponca City	6,500	6,000	6,000
Garber Refining Co. (Omar)	3,000	2,600	2,500
Gilmer Oil Co., Ringling	1,500	350	1,500
Globe Oil & Refining Co., Blackwell	5,000	4,000	4,700
Hewitt Refining Co., Hewitt	1,500	Shut down	Shut down
Illinois Oil Co., Cushing	3,000	600	1,000
Imperial Refining Co., Ardmore	6,000	3,150	3,500
Independent Oil & Gas Co. (Allied), Okmulgee	4,000	2,700	2,700
Interocean Refining Co. (Lorraine), Bristow	4,000	1,000	1,000
Lawton Refining Co., Lawton	1,000	Shut down	Shut down
Johnson Oil Refining Co., Cleveland	5,000	4,400	4,250
Marland Refining Co., Ponca City	30,000	27,500	22,000
Mecca Refining Co., Allen	1,500	100	100
Mid-Continent Petroleum Co. (Cosden), West Tulsa	35,000	22,500	22,500
*Miller Brothers 101 Ranch, Marland	100	50	50
†Oil State Refining Co., Enid	2,000	Rerun	250
Oklahoma Asphalt Co. (Nyanza), Wilson	3,000	Shut down	250
Peppers Gasoline Co., Covington	1,000	1,000	900
Pontotoc Pipe Line & Refining Co., Allen	800	250	300
Pierce Oil Corp., Sand Springs	10,000	6,500	6,750
Producers Oil Co., Bristow	1,500	1,200	800
Producers & Refiners Corp., West Tulsa	7,000	3,000	3,000
Pure Oil Co., Ardmore	6,500	2,100	2,000
Pure Oil Co., Muskogee	5,500	5,200	5,000
Riley Petroleum Co., Bristow	800	500	500
Rock Island Refining & Pipe Line Co., Duncan	2,500	1,750	1,850
Sayre Oil & Refining Co., Sayre	500	100	100
Shaffer Oil & Refining Co., Cushing	10,000	9,500	10,000
Sun Oil Co., Yale	3,000	2,500	2,400
Sinclair Refining Co., Muskogee	1,000	850	850
The Texas Company, West Tulsa	11,000	11,000	11,000
Texas Pacific Coal & Oil Co., Wynnewood	2,500	1,800	1,800
Tidal Refining Co., Drumright	10,000	6,000	6,000
Transcontinental Oil Co., Boynton	2,500	1,000	1,300
Transcontinental Oil Co., Bristow	6,000	4,000	4,500
Tonkawa Petroleum Co., Tonkawa	2,500	1,000	1,000
Western Oil Corp., Beckett	1,500	1,100	1,100
Yale Oil Corp., Yale	1,200	550	600
Total	263,500	177,250	173,850

*Average daily runs lower. †Operated by Bolene Refining Co.

(Continued on Page 91)

REFINERS INCREASE RUNS TO STILLS

(Continued from Page 86)

REFINING OPERATIONS IN KANSAS
(Plants which have been in operation during the past year.)

Name and location—	Daily Capacity	Runs November 1	Runs October 1
Arkansas City Refining Co., Arkansas City	8,000	4,000	2,500
Barnsdall Refs., Inc. (Waite Phillips), Wichita	5,000	3,000	Rerun
Derby Oil Co., Wichita	5,000	2,500	3,500
Derby Oil Co., Russell	2,500	Shut down	Shut down
El Dorado Refining Co., El Dorado	3,500	2,200	2,500
Golden Rule Refining Co., Wichita	1,000	1,000	1,000
Kanotex Refining Co., Arkansas City	9,000	4,500	6,300
Manhattan Oil Co. (K. C. Ref. Co.), Kansas City	6,000	5,500	5,900
Miller Petroleum Co., Humboldt	2,000	1,000	1,300
National Refining Co., Coffeyville	6,000	6,000	6,000
Peerless Oil Refining Co., Chanute	3,000	2,000	2,200
Roxana Petroleum Corp., Arkansas City	19,500	16,000	16,000
Sinclair Refining Co., Coffeyville	6,500	6,000	6,000
Sinclair Refining Co., Argentine	8,000	5,300	5,300
Skelly Oil Co., El Dorado	14,000	11,500	9,900
Standard Oil Co. of Kansas, Neodesha	12,000	5,000	7,500
Vickers Petroleum Co., Potwin	3,500	2,550	1,850
White Eagle Oil & Refining Co., Augusta	6,500	5,000	5,500
West Missouri Group—			
Wilhoit Refining Co., Joplin	2,000	900	700
Total	123,000	83,950	83,150

REFINING OPERATIONS IN NORTH LOUISIANA
(Plants which have been in operation during the past year.)

Name and location—	Daily Capacity	Runs November 1	Runs October 1
Crystal Oil Ref. Corp. (Caddo Central), Shreveport	10,500	9,500	7,800
Great Southern Refining Co., Ardis	2,000	Shut down	Shut down
Louisiana Oil Refining Corp., Shreveport, Bossier	25,000	22,000	22,000
Shreveport Producing & Refining Co., Shreveport	5,500	4,500	4,700
*The Texas Company, Shreveport	7,000	6,100	5,600
Total	50,000	42,100	40,100

*Topping.

REFINING OPERATIONS IN ARKANSAS
(Plants which have been in operation during the past year.)

Name and location—	Daily Capacity	Runs November 1	Runs October 1
Cross Refining Co., Smackover	4,000	3,950	3,900
Home Refining Co., Camden	500	Shut down	Shut down
Home Oil & Refining Co., Hot Springs	500	Shut down	Shut down
Houston Oil Co., Camden	5,000	2,100	1,800
Kettle Creek Refining Co., Pearson	5,000	4,500	5,000
Lion Oil & Refining Co., El Dorado	10,000	6,500	7,800
Newark Refining Co., El Dorado	1,500	1,500	1,000
Ouachita Valley Refining Co., El Dorado	1,500	600	650
Root Refineries, El Dorado	3,000	2,500	3,000
E. M. Tulle, El Dorado	1,000	200	200
Total	32,000	21,850	23,350

NORTH TEXAS MARKET DEVELOPS WEAKNESS

WICHITA FALLS, Tex., Nov. 8.—A decided weakening developed in north Texas gasoline and kerosene markets the past week following general reductions in crude prices. Natural gasolines, however, stiffened, while fuel oil and gas oil continued unchanged. Distillates were soft.

Due to the slow demand, U. S. Motor (58-60 437) gasoline was offered freely at 9 cents Monday. Higher gravity gasolines also were inactive and softened despite recent export purchases. Prices were off from an eighth to a quarter cent, with 60-62 400 available at 10 cents and the 64-66 375 grade at 10¼ cents. An exporter was in the market the latter part of the week, but no material was reported purchased.

Natural gasolines were up Monday from an eighth to a quarter cent. Grade C was fairly scare at 8⅝ to 8¾ cents. The A and B grades were slightly easier than Grade C, but were held for 9¼ to 9½ cents on the A grades and 8¾ to 9 cents on the B grades.

Kerosene found slow movement, and, as a result, material was obtainable at lower prices, with some reported offered as low as 6¼ cents. Refiners on the whole were quoting from 6½ to 6¾ cents.

Fuel oil and gas oil were unchanged. The former product was firm. Purchases of the previous two weeks apparently cleaned up the market, and, not being forced to move material, refiners are getting easily from $1.50 to $1.60 on what fuel they have. Gas oil was featureless. Distillates were very sluggish.

PENNSYLVANIA MARKET IS A LITTLE WEAKER

OIL CITY, Pa., Nov. 6.—Gasoline and naphtha in the Pennsylvania market were both a little weaker during the past week, bad weather conditions for motoring having had some effect on the demand for this product both at the service stations and the refineries. Kerosene is in about the same shape as it was a week ago and there is little demand for it. Fuel oil is stronger on account of the coal situation. Neutrals are also strong with good demand. There was little activity in the wax market. There was not much demand for cylinder stocks during the week, a condition which has existed for some time. Bright stocks were a little weaker.

GASOLINE IS REDUCED IN BRITISH MARKET

NEW YORK, Nov. 8.—It is reported that Standard Oil, Dutch-Shell and Anglo-Persian have come to an agreement on prices in Europe, especially with reference to gasoline. Efforts are being made to bring the cost of gasoline down to a level which will result in stimulating consumption prices being considerably higher per gallon than in the United States, partly as a result of the large cost of transportation and import duties. These high prices have restricted the purchase of automobiles but foreign and American motor companies are now getting lower priced cars on the market, and with gasoline at a more popular price level, it is believed the automobile will ultimately find its place with the average man as it has in the United States.

The Anglo-American Oil Co. cut the price of gasoline the equivalent of 3 cents a gallon in England this week. This was the first reduction made this year.

SHREVEPORT MARKET MOVEMENTS STEADIER

SHREVEPORT, La., Nov. 9.—Recent cuts in the price of crude did not help the weakened Shreveport refined market as expected. Gasoline throughout the past week was a little steadier, although its price was off fractionally at the opening of this week.

Natural gasolines were firm and a larger volume was being moved. Kerosene was scarce and its market showed signs of strengthening a little. Gas oils strengthened a little and were moving more steadily. Fuel oil was firm.

MAGNOLIA DREW FROM STORAGE

The Magnolia Petroleum Co.'s pipeline runs in Kansas and Oklahoma in October aggregated 1,212,482 bbls., a daily average of 39,112 bbls.; shipments, 1,525,327 bbls., daily average 49,204 bbls.; stocks, 3,440,253 bbls. The company's shipments south increased over those of September to such a degree as to cause the withdrawal of 332,206 bbls., or 10,719 bbls. a day from its Oklahoma-Kansas crude stocks.

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Rustproof compound for all metal surfaces, machinery, piping and mechanical equipment. Not a paint but a chemical rust inhibitive compound.

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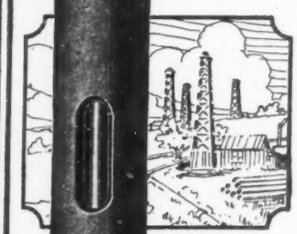

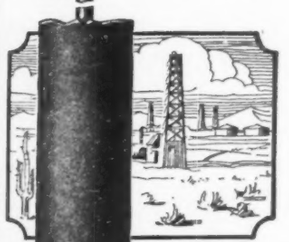

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LARKIN & CO.

BUTLER, PA., U. S. A.

RESULTS OF USE OF AIR AND AIR-GAS

(Continued from Page 32)

both two and four-cycle engines are successfully operated. Pressure on air intake wells is governed by sand conditions, wells on the soft open streak of sand, referred to, will take 500,000 feet per day at 250 pounds pressure while wells half a mile distant will take from 30,000 to 80,000 feet per day. Other wells where more broken sand conditions prevail may take from 15,000 to 40,000 feet per day at 380 pounds pressure. Existing by-passing or channelling of air through the sand from air intake wells to pumping wells is controlled by intake and outlet orifice gauges. By-passing is a condition to be reckoned with.

There is, of course, more or less danger in using air-gas mixture under high pressure and high temperature. The lightning arrestors on gas lines have been discarded as a means of safety, and a more logical means adopted which is an automatic device that will alternately admit charges of air-gas and pure air of equal proportions possibly 200 to 300 feet, thus providing sufficient cooling area to prevent explosions, except possibly in the short space where air-gas mixture is confined which would be practically harmless.

Our computations show that we are putting into the sand an average of 2,400,000 feet per day; air escaping from pumping wells, 700,000, or 30 per cent; air-gas packed into sand, 1,700,000, or 70 per cent.

From 46 oil wells the average feet of air-gas per well is 22,500 feet per day with 2.89 bbls. of oil and 1.91 bbls. of water; 14,700 feet of air-gas and 7,800 feet of pure hydrocarbon gas per well per day, while the cubic feet of air-gas per barrel of oil is 7,800 feet. Air per barrel of oil is 5,110 feet. Pure gas per barrel of oil is 2,690 feet. Water per barrel of oil is .318 bbls.

Solubility of Air

There have been some tests made to determine the solubility of air in oil and the relative solubility of gases in oils with reference to air. The solubility of gas in oil differs both with the nature of the oil and gas. Gas is from three and one-half to six times more soluble in oil than is air. At atmospheric pressure, or 14.4 pounds, one barrel of oil will dissolve approximately .465 feet of air. At 200 pounds pressure there will be held in solution six feet of free air, by a barrel of oil. At 800 pounds 24 feet of air will be held in solution in a barrel of oil. That is, at 800 pounds one barrel of oil will hold in solution 4.3 times its own volume of air, and will hold in solution gas varying from three and one-half to six times this amount, depending on the nature of the oil and gas. This demonstrates that to use gas as a pressure medium is out of the question on account of its scarcity or high cost, about 10,000 feet is an average amount of air required to produce a barrel of oil or water.

I have never been enthusiastic about water flooding. Rather I have maintained that air would prove superior. In 1913 we made an attempt to use air in some locality where it is now successfully being done At no time did the pressure exceed 125 pounds. At the end of six months, six wells surrounding the air well, all of them on the open part of sand referred to, showed an increase of 700 per cent. This continued for about one year when air and gas mixture interfered with operation of machinery to the extent that further use of air was abandoned and the affected wells soon reduced to normal production. The following summer gas was used under the same conditions and at 75 pounds pressure with about 80 per cent of increased production shown by air.

We are convinced that air and air-gas under careful management will produce better results than water, and leave in the sand a mixture of air-gas that will be of value for years to come, while a water-logged or flooded oil sand is as valueless as a worked-out coal mine.

In addition to restoring pressure with air we are using it to clean out and flow wells, under agreement with Dunn & Lewis. Cleaning out 2,000-foot wells requires about 12,000 feet of air per charge. From four to six charges are made each day; 10 to 15 bbls. of water is used with each charge of air. The result has been much more satisfactory at half the cost of the old tool method of cleaning out. No rig or machinery are needed except any sort of a secure mast and tractor.

We are flowing twenty-five 2,100-foot wells with air at pressures ranging from 150 to 275 pounds, and at greatly reduced lifting cost.

The oil business is no longer as haphazard as it has been in the past. Efficiency must be the watchword from now on as well as economy and loyalty to our own industry and product. There is still room for great improvement, which is sure to follow if the oil business is to continue prosperous. I know of no business or industry that would survive under the same wasteful methods that have prevailed in the production of oil and gas. I believe air is going to be the solution, for the present at least, of many perplexing problems. But it will be improved either by lateral drilling methods, mining, or the infusion of high-pressure vapors in connection with air that will break down the film of oil around each grain of sand. Putting gas into the ground under high natural pressure does not seem to have the same effect as gas forced into the sand by high pressure machinery. Whether the difference lies in the pulsing caused by the thrust of the piston accounts for it I shall have to leave to science; but it is just possible that even in the sand under a high pressure the thrust of a piston vibrates to an extent that will loosen up the oil more readily than a constant steady pressure.

CRUDE OIL PRODUCTION FOR 1926 1,071,330,000 BBLS.

(Continued from Page 82)

year 1926, however, shows a radically changed situation as there has been an excess of demand over supply, causing a reduction of the stocks estimated at 45,000,000 bbls. against an increase in stocks of some 28,000,000 in the preceding year. This change has been interpreted by some to represent the long expected turning of the corner heralding a more stable situation and a brighter future for the American oil industry.

Decline in Mexico

The Mexican production, which during 1926 will average daily close to 247,000 bbls., declined about 25,000,000 bbls or about 21 per cent from the preceding year, against a decline for 1925 of about 17 per cent.

Judging by the fragmentary information available regarding conditions in the Russian fields it is estimated that the production during the year will be close to 60,000,000 bbls., or about 170,000 bbls. daily average, representing about 5.8 per cent of the world's total production, and an increase of about 10,000,000 bbls. over the previous year.

The production of the Venezuelan fields increased from 19,000,000 to 35,000,000 the country's yield averaging about 96,000 bbls. daily, which is equivalent to 3¼ per cent of the world's total, and as a result Venezuela should outrank Persia for fourth position.

The production of Persia probably declined somewhat during 1926 due in part to the exhaustion or closing of some of the large flowing wells, the total being estimated at 30,000,000 bbls., a daily average of close to 825,000 bbls., or a total decline of about 5,000,000 from the previous year.

The Rumanian fields should reach a new high of 24,000,000 or about 66,000 bbls. daily average, and it is remarkable that this region, which has been producing for about 70 years, is now at its producing maximum. The country produces over 2 per cent of the world's output.

The fields of Dutch East Indies continue to show a slow gradual gain, the total being estimated at 22,000,000 bbls., or close to 60,000 bbls. daily.

After 30 years of producing life the Peruvian fields should reach a new peak in 1926, estimated at 11,500,000 bbls.

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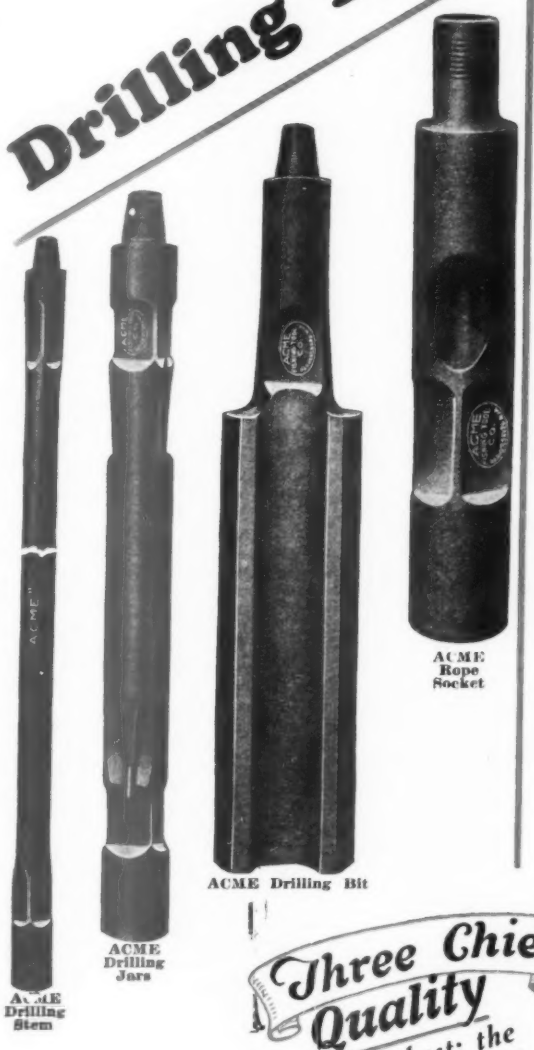
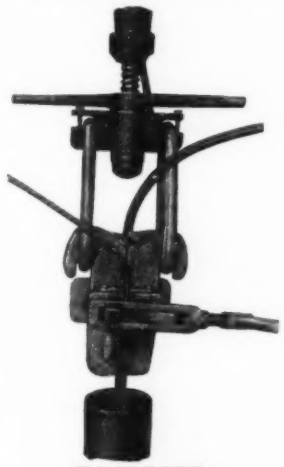


WIRE LINE DRILLING CLAMPS



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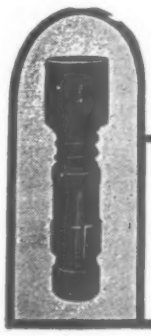

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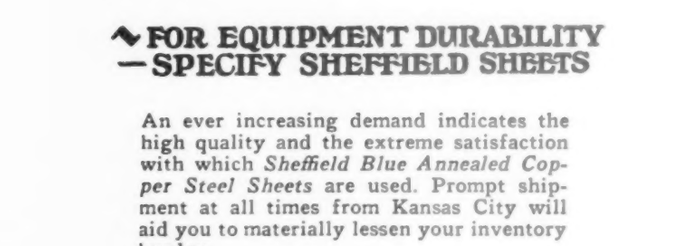

The country is producing 1.8 per cent of the world's total, or about 31,600 bbls. daily average.

The fields of India, Argentina, Trinidad and Poland, remained practically stationary, there being but a slight upward tendency in the yield of the first two.

Entry of Colombia

Perhaps the most interesting event in the year was the entry of Colombia into the world's market by the finishing of a pipeline, about 328 miles in length, connecting the Infantas Field in the Magdalena Valley with the harbor of Cartagena. The line was put into operation on July 1. The first tank steamer, the "T. J. Williams," left Cartagena on July 4, loaded with 87,500 bbls. of crude oil, the second was loaded on July 10, and two more on July 15. With this outlet to seaboard the Magdalena Valley fields of Colombia can now be exploited economically, and as a result it is likely that the country's yield will be practically doubled during 1927, thus raising Colombia from the thirteenth to the ninth position in ranking as an oil producer.

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World's Production of Petroleum
(In thousands of barrels)

	1924	1925	1926
United States ...	713,940	763,743	757,000
Mexico	139,497	115,515	90,000
Russia	45,312	52,448	62,000
Venezuela	8,754	19,687	35,000
Persia	32,373	35,038	30,000
Rumania	13,303	16,646	24,000
Dutch E. Indies..	20,473	21,422	22,000
Peru	7,812	9,164	11,500
India	8,150	8,000	8,000
Argentina	4,669	5,818	6,000
Trinidad	4,057	4,654	6,000
Poland	5,657	5,960	5,950
Colombia	445	581	5,000
Sarawak	4,163	4,257	4,300
Japan	1,959	2,000	1,820
Egypt	1,122	1,226	1,300
France	426	459	470
Germany	406	411	420
Canada	164	318	350
Czecho-Slovakia..	75	50	50
Italy	45	45	45
Algeria	12	12	12
Cuba	4	4	4
Others	109	108	109
Total	1,012,927	1,067,566	1,071,330

Summarizing the foregoing it may be stated that the estimates for 1926 again emphasize the controlling importance in the oil industry of the fields in the American Continent, particularly those in the United States and Mexico, the figures showing further the sharp decline in Mexico and the increase in the yield of Venezuela, Colombia, Peru and Trinidad. The situation in the European and Asiatic fields, outside of the increase in Rumanian production, which is significally important, is somewhat indefinitely reflected owing to the uncertainties encountered in trying to ascertain whether the production of the Russian fields can be materially increased and to the lack of accurate information regarding the actual reasons for the apparent decline in the Persian fields. The decline in American oil stocks, for the first time in seven years, is perhaps the most significant single happening during the year.

A birdseye view of the world's oil industry at this time further shows the necessity for the United States, as the largest oil consumer, to conserve its present supply and to insure its future supply, within and without its territory. In this connection the recent report of the Federal Oil Conservation Board, appointed by President Coolidge, is worthy of serious consideration.

L. B. FLICK DEAD

SAN ANTONIO, Tex., Nov. 8.—L. B. Flick died October 16 in Venezuela. Death was the result of peritonitis following an operation for appendicitis. Mr. Flick was superintendent of production in Mexico for the Pan American when it was owned by the Doheny interests and was in charge when some of the biggest wells in Mexico were brought in. Later he came to San Antonio to operate independently and when he left Mexico his friends were so numerous a big party and ball was given in his honor and special trains were run to bring people in from the outlying fields. After operating in San Antonio independently and in the firm of Flick, Tong & Coupe, all the members being from the Mexican fields, he accepted a position as superintendent of production with the Lago corporation and has been in Venezuela only a few months. He has a brother representing the Oil Well Supply Co. in foreign fields. His father was also an oil man in California.

SAYS ANTI-TRUST LAW DOES NOT APPLY

(Continued from Page 31)

uets of any factory or mine, where 30 days prior thereto, children under prescribed ages were employed. In assailing the constitutionality of the Act, two basic contentions were made: (1) That the Act was not properly a regulation of interstate and foreign commerce; (2) That it contravened the Tenth Amendment to the Constitution reserving to the States, all powers not expressly delegated to the Federal Government.

After pointing out that the commodities prohibited in interstate commerce, were not intrinsically bad, and therefore, not within the rule of the Lottery case and the Pure Food case, the Court said:

> "The grant of power to Congress over the subject of interstate commerce, was to enable it to regulate such commerce and not to give it authority to control the States in their exercise of the policy power over local trade and manufacturing. * * * The grant of authority over purely federal matter was not intended to destroy the local power always existing and carefully reserved to the States in the Tenth Amendment to the Constitution. * * * Police regulations relating to the Internal trade and affairs of the States have been uniformly recognized as within such control. * * * There should be limitations upon the right to employ children in mines and factories in the interest of their own and public welfare all will admit. * * * It may be desirable that such laws be uniform, but our Federal Government is one of the enumerated powers and the maintenance of the authority of the States over matters purely local is as essential to the preservation of our institutions as is the conservation of the supremacy of the Federal Government, in all matters intrusted to the nation by the Federal Constitution. * * * The power of the States to regulate their purely internal affairs by such laws as seem wise to the local authority, is inherent and has never been surrendered to the general Government."

Statute Unconstitutional

In holding the statute unconstitutional, the Court said:

> "Thus the Act, in a two-fold sense, is repugnant to the Constitution. It not only transcends the authority delegated to Congress over commerce, but also exerts a power as to purely local matters to which the Federal Authority does not extend."

Then later Congress sought to control the employment of child labor, by the indirect method of placing an excise tax on the net profits of the employer of child labor, under prescribed ages. Under the authority of the Dagenhart case, it was held that the act evinced an attempt by Congress to regulate a local matter, which power, under the Tenth Amendment, was reserved to the States. Child Labor Tax case, 259 U. S. 20, 11 L. Ed. 817. That is the consistent attitude of the Federal Courts not to extend the operation of the Commerce clause so as to encroach upon matters of a local nature, appears from those decisions denying to the Federal Trade Commission visitoral powers in relation to transactions of an intra-state, as distinguished from interstate character. Federal Trade Commission vs. Lorillard Co., 283 Fed. 999; United States vs. Basic Products Co., 260 U. S. 472; Federal Trade Commission vs. Lorillard Co., 68 L. Ed. 382.

EASTERN FIELDS

(Continued from Page 62)

the Maysville Oil & Gas Co.'s No. 3 on the T. S. Mowery farm is dry and abandoned. In the same township, the Griffin Producing Co. is due in the Clinton sand at No. 6 on the Marlow Oil & Gas Co.'s lease. The Preston Oil Co. is drilling a second test on the Almeda Linton farm. In Section 34, Falls Gore Township, the Griffin Producing Co. has a rig up for a second test on the Robert Tucker farm. In Section 24, Adair & Sturms' test on the Woodruff heirs' farm is a gasser in the Berea grit.

Holmes County

In Section 18, Prairie Township, Holmes County, the Pure Oil Co.'s second test on the Isaac F. Snyder farm is good for 15 or 20 bbls. in the Clinton sand. In Section 14, Richland Township, the Kemrow company is due in the Clinton sand at a test on the Rosa Bricker farm. In Section 12, Killbuck Township, the Leonard Oil & Gas Co.'s test on the Alvin E. Patterson farm is a gasser in the Clinton sand. In Section 12, same township, the Ohio Fuel Gas Co. got a gasser at a test on the C. P. Allison farm. In Section 7, Monroe Township, the Ohio Oil Co. is due in the Clinton sand at a test on the Oliver Smitheiser farm.

In Lot 24, Newton Township, Licking County, the Ohio Fuel Supply Co. has completed in the Berea grit No. 14 on the Ellen E. Forry farm. In the same section, the same company has completed in the same formation No. 15 on the Ellen E. Forry farm, good for 35 bbls. a day.

In Lot 6, Newton Township, the Ohio Fuel Supply Co. has a 15-bbl. pumper in the Berea grit at No. 7 on the Orpha Hansberger farm. In the southwest quarter of Section 26, Harrison Township, Perry County, the Leonard Oil & Gas Co.'s test on the R. W. Fitch farm is showing for a 25-bbl. producer in the Clinton sand.

Washington County

On Dana Run, Newport Township, Washington County, G. W. Kesselring has completed in the Mitchell sand No. 21 on the A. B. Little farm. It is a duster. In the central part of Section 28, W. J. Todd & Co. had the same luck when they drilled No. 3 on the J. C. Bosworth heirs' farm through the Keener sand.

Two and one-half miles east of Chesterhill, Section 8, Marion Township, Morgan County, the Oil City Trust Co. completed in the first Cow Run sand No. 13 on the T. J. Edgerton farm. It is a duster. In the same locality, same township, W. R. Metcalf & Co. completed in the same formation No. 3 on the S. H. Scofield farm. It is also a duster.

In the southwest quarter of Section 21, York Township, Morgan County, the Pure Oil Co.'s No. 6 on the M. C. Nicewanner farm is through the Berea grit and good for 6 bbls. a day. In the same formation and township, the same company's No. 6 on the W. F. Williams farm is good for 4 bbls. a day.

In the southwest quarter of Section 1, Fallsbury Township, the Goshen Oil Co. has completed No. 4 on the C. E. Vanwinkle farm, good for 5 bbls. a day in the Berea grit.

In Section 29, Enoch Township, Noble County, F. A. Michael & Co. has a 2-bbl. pumper in the Buell Run sand at No. 7 on the L. A. and Ella Harper farm. In Section 31, Sharon Township, John T. Young and others have a 3-bbl. pumper in the Berea grit at a test on the George R. Radcliff farm. In Section 18, Noble Township, George E. Jewell & Co.'s No. 3 on the Otis Davis farm is good for 2 bbls. a day in the Berea grit.

Week-End Completions

At the close of the week's operations in the southeastern Ohio fields but two completions were reported, one a fair producer and the other a shallow sand duster.

In the northwest quarter of Section 23, Hopewell Township, Licking County, the Pure Oil Co. completed and shot in the Clinton sand a test on the Arthur Orr farm. It produced 60 bbls. the first 24 hours.

In the Fisher Pool, Section 73, Athens Township, Athens County, Clark & Co. drilled a test on the Chauncey Lawson farm through the Berea grit and dry. In Franklin Township, Licking County, Moore & Adams are drilling on the P. L. and Mary E. Wolfe farm. In Hanover Township, the Hope Construction & Refining Co. has a rig up on the Charles Cannon farm.

In the southwest quarter of Section 21, Fallsbury Township, Ohio, located in the shallow territory, the Leonard Oil & Gas Co. has completed and shot in the Berea grit, No. 8 on the Myers & Co. farm, good for 15 bbls. a day.

Morgan County

In the southeast quarter of Section 29, York Township, Morgan County, the Swingle Oil & Gas Co. has completed a test on the Grant Bailey farm. It is a gasser good for 800,000 feet in the Maxon sand. In the northeast quarter of Section 33, York Township, the Pure Oil Co. completed and shot in the Berea grit No. 11 on the Isaac Smith farm. It is a 6-bbl. pumper. In Section 32, Chester Township, Meigs County, the Pure Oil Co. is drilling first and second tests on the Minnie Kantz farm.

In Sutton Township, Edward Calderwood and others are drilling a second test on the D. M. Nease farm and Rush Brothers & Co. have a rig up for a second test on the D. M. Nease farm.

In Section 26, Grandview Township, Washington County, Sutton Brothers have a rig up for a test on the R. C. Weffer farm. In Newport Township, F. L. Johnson & Co. are due in the sand at a test on the George G. Bate farm. In Lawrence Township, A. L. Root and others are due in the sand at a test on the Mary Root farm. In Aurelius township, Jerry Buckley is drilling in the sand on the Biggs Hupp farm.

West Virginia

In Ten-Mile district, Harrison County, the Clarksburg Light & Heat Co. has a gasser in the 50-foot sand on the S. D. Gore heirs' farm. The rig for another test on the same farm has been completed. In McClelland district, Doddridge County, the Little Five Oil Co. has a gasser in the stray sand at a test on the Charles Digman farm.

In Magnolia district, Wetzel County, the Silver Hill Oil Co.'s test on the J. F. Burley farm is good for 25 bbls. a day in the stray sand. The same company is starting a second test on the same farm. In Liberty district, Marshall County, the Manufacturers Light & Heat Co.'s test on the S. H. and M. Earnest farm is a gasser in the Gordon sand.

Southwest Pennsylvania

In Morris Township, Greene County, the Manufacturers Light & Heat Co.'s second test on the Nellie Cooper farm is a gasser in the Big Injun sand. In Richhill Township, the Dunmar Oil & Gas Co. drilled No. 3 on the J. H. Headley farm to the lower sands and dry. They will fill up to the Big Injun sand, give it a shot and test.

In Greene Township, Beaver County, McCarty & Co. have completed a test on the George Belch farm, good for 4 bbls. a day. In Ohio Township, L. A. Reed & Co. have completed a test on the Anna Richards farm. It was given a shot and failed to respond. It will probably be abandoned.

In Morris Township, Greene County, the best wells are holding up as follows: No. 1 Anderson, 100 bbls.; Nos. 1 and 2 J. A. Rutan, 150 and 175 bbls. respectively; Nos. 4 and 5 T. F. Rutan, 75 and 80 bbls. respectively.

KENTUCKY-TENNESSEE

(Continued from Page 58)

faint conception of the magnitude of the field in that territory. It is being developed in a quiet and unostentatious way. Men of experience are conducting their operations, and are being rewarded with many good wells.

Week's Work

A summary of the week's work in the Kentucky Field shows 28 completions, 21

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A birdseye view of the world's oil industry at this time further shows the necessity for the United States, as the largest oil consumer, to conserve its present supply and to insure its future supply, within and without its territory. In this connection the recent report of the Federal Oil Conservation Board, appointed by President Coolidge, is worthy of serious consideration.

L. B. FLICK DEAD

SAN ANTONIO, Tex., Nov. 8.—L. B. Flick died October 16 in Venezuela. Death was the result of peritonitis following an operation for appendicitis. Mr. Flick was superintendent of production in Mexico for the Pan American when it was owned by the Doheny interests and was in charge when some of the biggest wells in Mexico were brought in. Later he came to San Antonio to operate independently and when he left Mexico his friends were so numerous a big party and ball was given in his honor and special trains were run to bring people in from the outlying fields. After operating in San Antonio independently and in the firm of Flick, Tong & Coupe, all the members being from the Mexican fields, he accepted a position as superintendent of production with the Lago corporation and has been in Venezuela only a few months. He has a brother representing the Oil Well Supply Co. in foreign fields. His father was also an oil man in California.

SAYS ANTI-TRUST LAW DOES NOT APPLY

(Continued from Page 31)

ucts of any factory or mine, where 30 days prior thereto, children under prescribed ages were employed. In assailing the constitutionality of the Act, two basic contentions were made: (1) That the Act was not properly a regulation of interstate and foreign commerce; (2) That it contravened the Tenth Amendment to the Constitution reserving to the States, all powers not expressly delegated to the Federal Government.

After pointing out that the commodities prohibited in interstate commerce, were not intrinsically bad, and therefore, not within the rule of the Lottery case and the Pure Food case, the Court said:

> "The grant of power to Congress over the subject of interstate commerce, was to enable it to regulate such commerce and not to give it authority to control the States in their exercise of the policy power over local trade and manufacturing. * * * The grant of authority over purely federal matter was not intended to destroy the local power always existing and carefully reserved to the States in the Tenth Amendment to the Constitution. * * * Police regulations relating to the Internal trade and affairs of the States have been uniformly recognized as within such control. * * * There should be limitations upon the right to employ children in mines and factories in the interest of their own and public welfare all will admit. * * * It may be desirable that such laws be uniform, but our Federal Government is one of the enumerated powers and the maintenance of the authority of the States over matters purely local is as essential to the preservation of our institutions as is the conservation of the supremacy of the Federal Government, in all matters intrusted to the nation by the Federal Constitution. * * * The power of the States to regulate their purely internal affairs by such laws as seem wise to the local authority, is inherent and has never been surrendered to the general Government."

Statute Unconstitutional

In holding the statute unconstitutional, the Court said:

> "Thus the Act, in a two-fold sense, is repugnant to the Constitution. It not only transcends the authority delegated to Congress over commerce, but also exerts a power as to purely local matters to which the Federal Authority does not extend."

Then later Congress sought to control the employment of child labor, by the indirect method of placing an excise tax on the net profits of the employer of child labor, under prescribed ages. Under the authority of the Dagenhart case, it was held that the act evinced an attempt by Congress to regulate a local matter, which power, under the Tenth Amendment, was reserved to the States. Child Labor Tax case, 259 U. S. 20, 11 L. Ed. 817. That is the consistent attitude of the Federal Courts not to extend the operation of the Commerce clause so as to encroach upon matters of a local nature, appears from those decisions denying to the Federal Trade Commission visitoral powers in relation to transactions of an intra-state, as distinguished from interstate character. Federal Trade Commission vs. Lorillard Co., 283 Fed. 999; United States vs. Basic Products Co., 260 U. S. 472; Federal Trade Commission vs. Lorillard Co., 68 L. Ed. 382.

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EASTERN FIELDS

(Continued from Page 62)

the Maysville Oil & Gas Co.'s No. 3 on the T. S. Mowery farm is dry and abandoned. In the same township, the Griffin Producing Co. is due in the Clinton sand at No. 6 on the Marlow Oil & Gas Co.'s lease. The Preston Oil Co. is drilling a second test on the Almeda Linton farm. In Section 34, Falls Gore Township, the Griffin Producing Co. has a rig up for a second test on the Robert Tucker farm. In Section 24, Adair & Sturms' test on the Woodruff heirs' farm is a gasser in the Berea grit.

Holmes County

In Section 18, Prairie Township, Holmes County, the Pure Oil Co.'s second test on the Isaac F. Snyder farm is good for 15 or 20 bbls. in the Clinton sand. In Section 14, Richland Township, the Kemrow company is due in the Clinton sand at a test on the Rosa Bricker farm. In Section 12, Killbuck Township, the Leonard Oil & Gas Co.'s test on the Alvin E. Patterson farm is a gasser in the Clinton sand. In Section 12, same township, the Ohio Fuel Gas Co. got a gasser at a test on the C. P. Allison farm. In Section 7, Monroe Township, the Ohio Oil Co. is due in the Clinton sand at a test on the Oliver Smitheiser farm.

In Lot 24, Newton Township, Licking County, the Ohio Fuel Supply Co. has completed in the Berea grit No. 14 on the Ellen E. Forry farm. In the same section, the same company has completed in the same formation No. 15 on the Ellen E. Forry farm, good for 35 bbls. a day.

In Lot 6, Newton Township, the Ohio Fuel Supply Co. has a 15-bbl. pumper in the Berea grit at No. 7 on the Orpha Hansberger farm. In the southwest quarter of Section 26, Harrison Township, Perry County, the Leonard Oil & Gas Co.'s test on the R. W. Fitch farm is showing for a 25-bbl. producer in the Clinton sand.

Washington County

On Dana Run, Newport Township, Washington County, G. W. Kesselring has completed in the Mitchell sand No. 21 on the A. B. Little farm. It is a duster. In the central part of Section 28, W. J. Todd & Co. had the same luck when they drilled No. 3 on the J. C. Bosworth heirs' farm through the Keener sand.

Two and one-half miles east of Chesterhill, Section 8, Marion Township, Morgan County, the Oil City Trust Co. completed in the first Cow Run sand No. 13 on the T. J. Edgerton farm. It is a duster. In the same locality, same township, W. R. Metcalf & Co. completed in the same formation No. 3 on the S. H. Scofield farm. It is also a duster.

In the southwest quarter of Section 21, York Township, Morgan County, the Pure Oil Co.'s No. 6 on the M. C. Nicewanner farm is through the Berea grit and good for 6 bbls. a day. In the same formation and township, the same company's No. 6 on the W. F. Williams farm is good for 4 bbls. a day.

In the southwest quarter of Section 1, Fallsbury Township, the Goshen Oil Co. has completed No. 4 on the C. E. Vanwinkle farm, good for 5 bbls. a day in the Berea grit.

In Section 29, Enoch Township, Noble County, F. A. Michael & Co. has a 2-bbl. pumper in the Buell Run sand at No. 7 on the L. A. and Ella Harper farm. In Section 31, Sharon Township, John T. Young and others have a 3-bbl. pumper in the Berea grit at a test on the George R. Radcliff farm. In Section 18, Noble Township, George E. Jewell & Co.'s No. 3 on the Otis Davis farm is good for 2 bbls. a day in the Berea grit.

Week-End Completions

At the close of the week's operations in the southeastern Ohio fields but two completions were reported, one a fair producer and the other a shallow sand duster.

In the northwest quarter of Section 23, Hopewell Township, Licking County, the Pure Oil Co. completed and shot in the Clinton sand a test on the Arthur Orr farm. It produced 60 bbls. the first 24 hours.

In the Fisher Pool, Section 73, Athens Township, Athens County, Clark & Co. drilled a test on the Chauncey Lawson farm through the Berea grit and dry. In Franklin Township, Licking County, Moore & Adams are drilling on the P. L. and Mary E. Wolfe farm. In Hanover Township, the Hope Construction & Refining Co. has a rig up on the Charles Cannon farm.

In the southwest quarter of Section 21, Fallsbury Township, Ohio, located in the shallow territory, the Leonard Oil & Gas Co. has completed and shot in the Berea grit, No. 8 on the Myers & Co. farm, good for 15 bbls. a day.

Morgan County

In the southeast quarter of Section 29, York Township, Morgan County, the Swingle Oil & Gas Co. has completed a test on the Grant Bailey farm. It is a gasser good for 800,000 feet in the Maxon sand. In the northeast quarter of Section 33, York Township, the Pure Oil Co. completed and shot in the Berea grit No. 11 on the Isaac Smith farm. It is a 6-bbl. pumper. In Section 32, Chester Township, Meigs County, the Pure Oil Co. is drilling first and second tests on the Minnie Kantz farm.

In Sutton Township, Edward Calderwood and others are drilling a second test on the D. M. Nease farm and Rush Brothers & Co. have a rig up for a second test on the D. M. Nease farm.

In Section 26, Grandview Township, Washington County, Sutton Brothers have a rig up for a test on the R. C. Weffer farm. In Newport Township, F. L. Johnson & Co. are due in the sand at a test on the George G. Bate farm. In Lawrence Township, A. L. Root and others are due in the sand at a test on the Mary Root farm. In Aurelius township, Jerry Buckley is drilling in the sand on the Biggs Hupp farm.

West Virginia

In Ten-Mile district, Harrison County, the Clarksburg Light & Heat Co. has a gasser in the 50-foot sand on the S. D. Gore heirs' farm. The rig for another test on the same farm has been completed. In McClelland district, Doddridge County, the Little Five Oil Co. has a gasser in the stray sand at a test on the Charles Digman farm.

In Magnolia district, Wetzel County, the Silver Hill Oil Co.'s test on the J. F. Burley farm is good for 25 bbls. a day in the stray sand. The same company is starting a second test on the same farm. In Liberty district, Marshall County, the Manufacturers Light & Heat Co.'s test on the S. H. and M. Earnest farm is a gasser in the Gordon sand.

Southwest Pennsylvania

In Morris Township, Greene County, the Manufacturers Light & Heat Co.'s second test on the Nellie Cooper farm is a gasser in the Big Injun sand. In Richhill Township, the Dunmar Oil & Gas Co. drilled No. 3 on the J. H. Headley farm to the lower sands and dry. They will fill up to the Big Injun sand, give it a shot and test.

In Greene Township, Beaver County, McCarty & Co. have completed a test on the George Belch farm, good for 4 bbls. a day. In Ohio Township, L. A. Reed & Co. have completed a test on the Anna Richards farm. It was given a shot and failed to respond. It will probably be abandoned.

In Morris Township, Greene County, the best wells are holding up as follows: No. 1 Anderson, 100 bbls.; Nos. 1 and 2 J. A. Rutan, 150 and 175 bbls. respectively; Nos. 4 and 5 T. F. Rutan, 75 and 80 bbls. respectively.

KENTUCKY-TENNESSEE

(Continued from Page 58)

faint conception of the magnitude of the field in that territory. It is being developed in a quiet and unostentatious way. Men of experience are conducting their operations, and are being rewarded with many good wells.

Week's Work

A summary of the week's work in the Kentucky Field shows 28 completions, 21

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Reed came right back—he was proud of his achievement and wanted the world to know it. "Well, I'd been considering VALDURA ASPHALT PAINT ever since the Atwell people had such splendid success with it on their roof. But first I got in touch with other users—found out that VALDURA had twice the covering capacity, four to five times longer life, was absolutely waterproof and weatherproof and had for its base genuine 99.5% pure Gilsonite Select Asphalt—also that it actually protected the surface covered, whether inside or outside, above ground or below ground. And, incidentally, that you paid for satisfactory results only."

The Superintendent was right on his toes—he believed in economy, too. "Reed—I want the entire plant, from top to bottom, gone over—all smokestacks, roofs, walls, window and door frames, foundations; even the tanks, derricks, structural steel, fencing, etc., that are in need of paint, give them a protective covering of VALDURA."

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producers with an initial production of 322 bbls., 5 dry holes and 2 gas wells. Compared with the previous week, there were one less completion, three less producing wells, one more dry hole and the same number of gas wells. The wells were distributed by counties and districts as follows:

County—	Oil Comp.	Wells	Prod.	Dry	Gas
Owensboro	11	7	100	4	0
Allen	6	6	17	0	0
Barren	3	2	35	1	0
Lawrence-Johnson	3	3	12	0	0
Floyd	2	0	0	0	2
Cumberland-Monroe	1	1	150	0	0
Wolfe	1	1	5	0	0
Simpson	1	1	3	0	0
Total	28	21	322	5	2
Last week	29	24	510	4	1
Difference	1	3	188	1	1

Blocking Up Acreage

While the natural gas companies are gathering in leases in the eastern part of Kentucky, they are watching closely all territory carefully for oil. In the western part of the State, gas is not so much sought but the oil trade is busy gathering in all acreage that looks as though oil would be found.

In the western portion the Petroleum Exploration Co., Ohio Oil Co., Rex-Pyramid Oil Co., Wood Oil Co., E. M. Treat Co., White Plains Oil & Gas Co., Lew J. Emery, Jr., Sons., J. W. Loman, trustee, Leeper Oil Co., Penn-Indiana Oil Syndicate and others are lining up acreage in various counties, such as Hancock, Ohio, Daviess, Butler, Muhlenburg, Warren, Allen, Barren, Simpson, Hopkins, Grayson, Hardin, Caldwell, Christian, Trigg, Todd and Logan Counties, all of which have been geologized and numerous structures found.

At the same time other counties, such as Barren, Monroe, Clinton, Edmonson, Adair, Larue, Hart, Green, Taylor, Metcalf, Marion, Casey and other counties of the west division, are getting attention. In the southwestern part of Christian County is quite an interesting area where, according to advice, a structure 18 miles in length has been found, noticeable when crossing it to anyone familiar with surface indications.

Tennessee

No new completions are reported from the Tennessee Fields. Just at this time one spot of much interest is Clay County, where some fine shallow wells have been completed, and with an outlet for the crude will soon show a good development. The pipeline recently completed to the Clark Hill Pool, in that county, of which Celia is the county seat, has been a great help, and this line is being continued to other production within the county. The Stoll Oil Refining Co. also has a line from the Tinsley's Bottom Field to Windle, in the same county, and between that line and the Paragon pipeline extensions the production of the county will be well taken care of.

New Oil Buyers

The Times Journal of Bowling Green, Ky., has this to say about the oil interest:

"J. R. Whalen, representing the Ohio Oil Co., Findlay, Ohio, is in Bowling Green in the interest of his company, which has entered the field as purchasers of western Kentucky crude. The price of $2.10 per barrel was posted on October 15. The Illinois Pipe Line Co. is laying new pipelines, connecting tanks in Allen and Warren Counties. Mr. and Mrs. W. F. McCray of Owensboro spent two days in the Allen and Warren County fields. Mr. McCray, who is general superintendent of all Kentucky lines, inspected the lines in the two counties."

Western Division

The Illinois Pipe Line Co. is putting its recently purchased pipeline system in the western Kentucky division in the best of shape and making improvements as rapidly as required to care for the production of the counties which it passes through.

Reports are that well No. 10 on the Bunch Vance lease near Rockfield, in Warren County, drilled by Victor Bartoletti, superintendent of the Lucky Strike Oil Co., sometime ago, is making 8 bbls. an hour. This well is 450 feet deep and is 3,500 feet east of the first producer found on the lease, which was a gusher brought in during the oil boom and which made between 700 and 800 bbls. in 24 hours.

J. J. Miller, owner of one of the best gas wells in Warren County, who lives at Richardsville, Warren County, is piping the gas to many of the homes at Richardsville for heating and lighting purposes. This well came in three years ago and its pressure has increased instead of diminishing. The well is 1,000 feet deep and has a rock pressure of 300 pounds and a volume slightly over 250,000 feet.

Several small completions are reported from the Scottsville Field of Allen County. The Helka Development Co.'s No. 1 on the F. H. Connell farm is only a 1-bbl. producer, and A. Davis has one of the same size in No. 6 on the W. M. Dodson farm. Mealey & Mealey's No. 23 on the M. and J. Lewis farm is good for 5 bbls. W. G. Moorman, receiver, is reported to have a 4-bbl. producer on the J. W. Frost farm, south of Scottsville in the old shallow development. G. W. Hahn's last well on the Meredith farm and Bastrus and others' last one on the E. Newman farm are listed as 3-bbl. producers.

In the Glasgow Field, Barren County, in the Hall Baker Pool, the Consolidated Gas Co.'s No. 49 is reported around 20 bbls. In the Knob Road Field, A. W. Ziegler, attorney, has what is reported a 15-bbl. producer in No. 5 on the Darter Brothers farm. The Elliott Oil Co.'s No. 4 on the Elliott farm is reported dry.

In the Franklin Field of Simpson County the Lincoln Oil Producing Co. is reported to have what shows for a 3-bbl. pumper on the Holleman farm.

In the Holliday Pool, in the Crocus Creek division of Cumberland County, Wood, Haislett, McLennon & Calhoun's No. 5 on the Brockman farm is rated at 150 bbls. The extension of the Paragon pipeline to the Holliday Pool, and the stored oil being taken care of will eventually bring about an active drilling campaign. Several wells are already under way since a market has been provided.

Owensboro Field

The Owensboro Field of Hancock, Ohio and Daviess Counties, one of the most active fields in the western division, comes to the front with 11 completions, leading all in the state for the past several days.

The Chicago Petroleum Syndicate's second well on the Nannie Brown 80 acres, in Daviess County, set casing at 703 feet, struck top of sand at 710 feet and bottom of sand at 736-5 and went to a total depth of 749 feet, where it was given a 100-quart shot, resulting in a 20-bbl. producer. J. W. Loman, trustee's No. 7 on the J. R. Ellis 50 acres, in Ohio County, set casing at 716 feet, struck top of sand at 725 feet and bottom of sand at 751 feet and drilled to a total depth of 760 feet. It was given a 70-quart shot and did 15 bbls.

In the Swope Pool, in Ohio County, the Penn-Indiana Oil Syndicate's No. 8 on the R. B. Powers 100 acres set a string of 503.5 feet of casing, struck top of sand at 503.5 and bottom at 518 feet, where it was given a 45-quart shot and produced 20 bbls. initial.

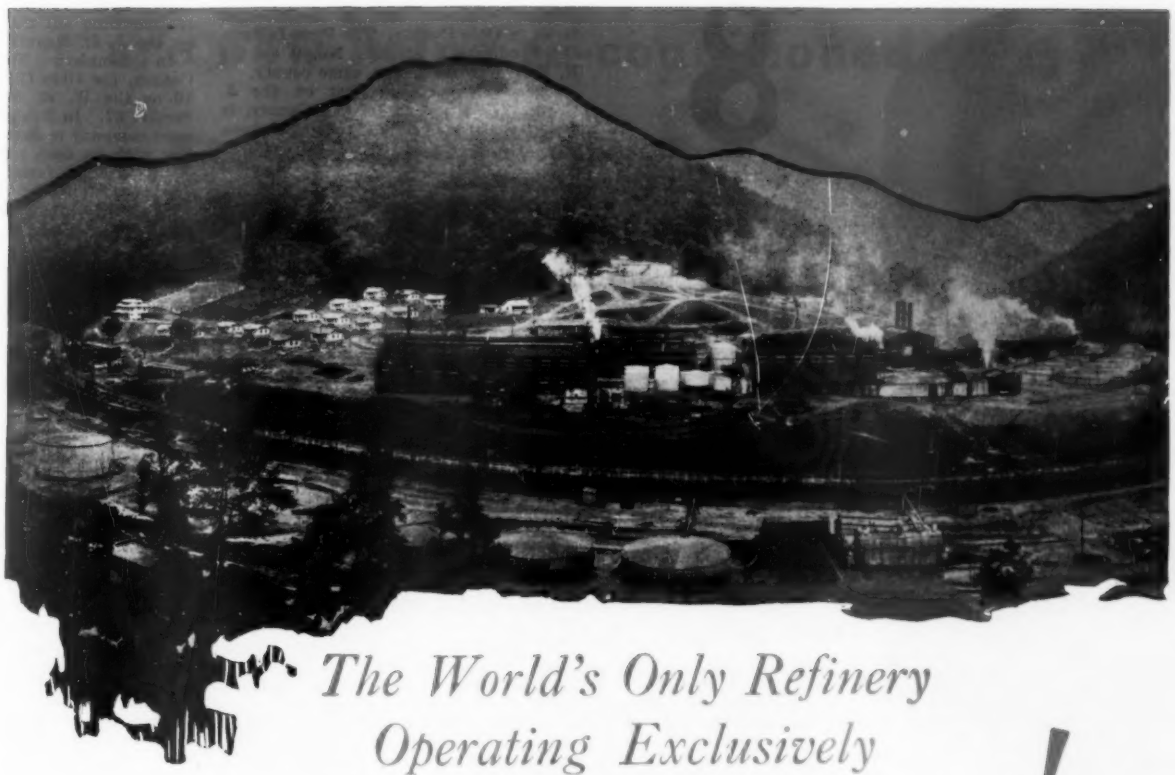
Near Aetnaville, Ohio County, the Ohio Oil Co.'s wildcat on the June Harrison farm, set 628 feet of casing, struck top of sand at 636 feet and bottom of sand at 648 feet, and went to a total depth of 652 feet and given a 50-quart shot. The well had a showing, but what the results will be depends upon what the well will do when cleaned out and put on the pump.

Thompson and Tremor drilled in a test on the E. Thompson farm, northwest of Collier, in Daviess County, getting a duster. This test is also quite a distance to the west of the Swope Pool.

J. W. Loman, trustee, brought in No. 6 on the J. R. Ells 50 acres, in Ohio County, for 15 bbls., and drilling No. 8, same farm.

Leeper Oil Co.'s No. 3 on the W. A. Probus 37 acres, in Ohio County, is an 18-bbl. producer, with No. 4 drilling and location staked for No. 5 well. Same company has a dry hole in No. 1 on the John Raymond farm.

The Wood Oil Co.'s No. 3 on the J. U. Bartley 139 acres, in Daviess County, is



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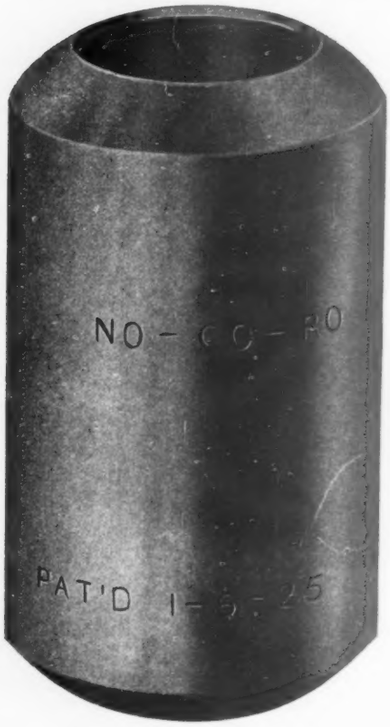
In a well formerly pulled once a week,



8 months without a change!

"We were using Standard Balls and Seats in one particular well, No. 2 John Coulter farm, and pulling same about once a week to replace Balls and Seats. Eight months ago we put a set of NO-CO-RO Drops and Seats in this well and same are still working, making a record of eight months' use where a Standard Ball and Seat in the same well lasted an average of one week.

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(Signed)
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Imagine! Here is a well that had to be pulled *once a week. Eight months ago* NO-CO-RO DROPS and Seats replaced Balls and Seats. *The well has not been pulled since!*

An entirely different principle of valve check design produces entirely different results. Whatever Ball and Seat Service you now receive, we will *guarantee* at least 50 per cent greater service with DROPS and Seats. The sooner you start, the sooner will you reduce your pulling and replacement costs to a level unthought of before.

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a 10-bbl. producer, with No. 4 under way. Thompson & Tremor is also starting a second test on the E. Thompson farm, same county.

White Plains Oil & Gas Co.'s initial venture on the Howard heirs 43 acres is reported good for 2 bbls. No. 1 on the Ada Kelley farm is drilling for this company.

The Rex-Pyramid Oil Co.'s No. 2 on the Jess Ambrose 100 acres is reported dry. The Petroleum Exploration Co. is starting a second test on the Howard farm, in Ohio County. The Penn-Indiana Oil Syndicate is starting No. 9 on the R. B. Powers 100 acres, same county.

The Ohio Oil Co.'s test on the J. Cooper 112 acres, in Daviess County, is reported a dry hole in the Jett, Jackson and Barlow sands, but expects to go deeper.

In Hancock County, the Spice Knob Oil Co. is nearing pay sand at No. 8 on the Bert Thompson 40 acres, while Bert Thompson is starting a test on the Frank Pulliam farm, same county.

The Creek Drilling Co. is starting a well on the R. A. Owens farm, and J. C. Ellis and others on the J. Weller farm. Leeper Oil Co. is drilling No. 3 on the J. A. Greer 100 acres.

D. J. White is drilling No. 1 on the O. T. Burdette 183 acres, which is an offset to No. 1 of the Surety Oil Co. on the J. W. McDaniels farm in Ohio County.

Eastern Division

Only a few completions were reported from the eastern division during the week. Two gas wells were drilled in Floyd County, in District 21. One is the Louisville Gas & Electric Co.'s No. 3 on the M. Martin lease, and the other is the Eastern Carbon Black Co.'s No. 2 on the S. C. Allen lease.

In Wolfe County, District 6, the Petroleum Exploration Co.'s No. 6 on the Spencer heirs farm is a 6-bbl. producer, with No. 7, same farm, drilling.

In the North Wier Field of Lawrence-Johnson Counties, in District 33, the Cumberland Petroleum Co.'s No. 10 Sena Hamilton farm, is good for 5 bbls., and Hovis & Young's No. 2 D. L. Skaggs farm, 2 bbls. In District 34, the Swiss Oil Corp, is cleaning out its No. 34 on the Proctor Sparks farm after a shot, and showing for an average producer. Same company is drilling No. 49 on the P. P. Holbrook farm, same district.

CENTRAL WEST FIELDS

(Continued from Page 58)

a shallow gas pay but was not utilized for any purpose.

In Friendsville Township, Wabash County, Miller, Legelsen and others' test, 200 feet from the north line and 1,300 feet from the west line of the Edward Hardwick 160 acres, in the NE of Section 25, a mile southeast of the town of Friendsville, and nearly a mile southwest of the well on the Ezra Bass farm, which was a good producer, was drilled to a total depth of 1,815 feet and was dry. The Wood Oil Co.'s No. 3 on the J. O. Wood farm, Section 19, adjoining the Bass farm to the east, proved a duster at a depth of 1,666 feet. Near the town of Linn, in the northern part of the same township, Smith & Strale drilled a test in the northwest corner of the M. Jackman farm, in the NE of the NE of Section 6, 4 miles west and 2 miles north of Allendale, to a total depth of 1,620 feet, and dry.

In Wabash Township, Wabash County, Ellison and others' No. 6 in the southeast corner of the Collison heirs farm, in the NW of Section 13, proved a duster at 1,472 feet. Cheuvrnont, Stranahan and others' test in the northeast corner of the Edward Wright farm, in the NW of the same section, also proved a duster at 1,476 feet.

In the Robinson Field, Robinson Township, Crawford County, the Ohio Oil Co.'s No. 11 in the southeast corner of the Samuel L. Firebaugh farm, in the E of the NE of Section 36, pumped 24 bbls. the first 24 hours from a depth of 1,155 feet. In Licking Township, same county, Sutherland and others are working at a test on the A. P. Matheney farm, Section 23.

In Johnson Township, Clark County, the W. C. McBride, Inc., is drilling a test on the Norman Bennett farm, Section 13, also drilling No. 26 on the James Rush farm, Section 26, Casey Township, and No. 11 on the Nettie Baker farm, Section 30, Martinsville Township. In the same township, the Trenton Rock Oil & Gas Co. is drilling No. 5 on the S. W. McClelland farm, same section. In Honey Creek Township, Crawford County, the Ohio Oil Co. is drilling No. 21 on the J. D. Reaville farm, Section 31.

In Dennison Township, Lawrence County, the Ohio Oil Co. is drilling No. 16 on the W. E. Robbins No. 2 farm, Section 27. In Bridgeport Township, the same company is down close around 4,000 feet with its deep test in No. 23 on the J. R. Middagh farm, Section 32. Same company is drilling No. 14 on the Clay Seed No. 1 farm, Section 16, Lawrence Township.

Central Ohio

Many new locations have been staked out for wells and a great number of wells have started spudding that were due some time ago. With the fair weather remaining an unusual activity would be seen by the large gas operating concerns in the next few weeks, for usually close to the holidays little is done and seldom much work is accomplished until in March.

In Clay Township, Knox County, the Logan Gas Co.'s No. 6 in the southeast corner of the B. F. Baird 219 acres, Section 19, is a 5-bbl. pumper from the Berea sand. Apple and others are drilling No. 1 well, 750 feet from the south line and 175 feet from the west line of the Oliver Larison 160 acres, Section 20. The Logan Gas Co. made a location for a test in the northwest corner of the Lawrence L. Wantland 55 acres, Section 14, Perry Township, same county. C. B. Winland and others are drilling a test in the northeast corner of the Charles Porterfield 145 acres, in Jackson Township, same county, Section 17. In Brown Township the Upham Gas Co.'s test in the northwest corner of the George Lifer 52 acres, Section 14, was a duster. Jefferson Township is the most active at this time in Knox County. The East Ohio Gas Co. drilled in a nice gas well at a test in the northwest corner of the Peter Kaufman 120 acres, Section 7. Same company has started the drill at its test in the northeast corner of the Sherman Stout 50 acres, Section 4, while the Upham Gas Co. is starting a test in the northeast corner of the Maud Swingle 38 acres, Section 20.

Ashland County

The Logan Gas Co. got a good average gas well at a test in the northwest corner of the P. M. Fluke 160 acres, Section 8, Orange Township, Ashland County, and drilling No. 2, same farm. Same company found a light gas well at a second test on the W. H. Brandt 252 acres, Section 2, the gas being found in the Newburg sand. Same company is drilling a test on the Carl Kotlachek farm, Section 4, and set a stake for a location for a test 828 feet from the north line and 665 feet from the east line of the D. A. and R. L. Shively 50 acres, Section 4. Hulse & Kundtz are drilling a test in the northeast corner of the John D. Shiffler 66 acres, Section 30, and made a location for No. 3 in the northeast corner of the Clarence McCoy 129 acres, Section 4. Orange Oil & Gas Co. is drilling No. 4 on the G. B. Frye 170 acres, Section 3. The Ohio Fuel Gas Co. brought in an average gas well at a second test on the L. M. Holbert 160 acres, Section 4.

In Hanover Township, same county, the Ohio Fuel Gas Co. landed a duster at a test in the northeast corner of the Mary Krumpt 80 acres, Section 24, and a very fair gas well in a second test in the northwest corner of the M. C. Leatherow 20 acres, Section 27. Same company made a location for a second well, 600 feet from the north line and 617 feet from the west line of the A. C. and B. F. Hazelett 40 acres, Section 27. The Logan Gas Co. is drilling No. 3 in the northeast corner of the B. M. Mavis 40 acres, Section 28, and No. 1 in the northeast corner of the Charles G. Spring 40 acres,

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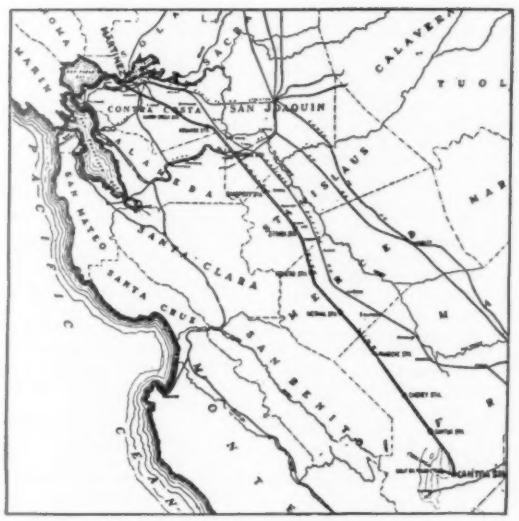

THE accompanying Map shows the location of these 170 miles of pipe line of the Shell Oil Company, from Martinez, Calif., to Cantoa Station, Calif., through the heart of the San Joaquin Valley.

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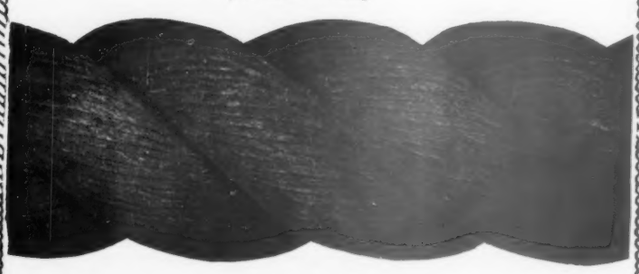

Worthy of Trust

Section 27. East Ohio Gas Co. is drilling No. 3 in the southwest corner of the H. Bookman 40 acres, Section 26.

In Lake Township, the Logan Gas Co. found a dry hole at a test in the northeast corner of the John Moores 160 acres, Section 19.

In Green Township the Logan Gas Co. has a light gas well at a test in the northwest corner of the Wiley Johnson 40 acres, Section 20, and the Ohio Fuel Gas Co. an average gas well at a second test, 60 feet north of the highway and 1,000 feet of the east line of the J. F. Jones 75 acres, Section 29.

In Sullivan Township, the Logan Gas Co. has a very nice gas producer in a test in the northeast corner of the John J. Smith 50 acres, Lot 81, and drilling its No. 2 on the L. and G. Burkhart 102 acres, Lot 80. Klise-Eckstein-McCann Co. is drilling No. 4 in the southeast corner of the J. A. Spencer 138 acres, Lot 79.

In Clear Creek Township, the Logan Gas Co. made an excellent gas find at a test in the northeast corner of the R. N. Shaw 80 acres, Section 12, and brought in a dry hole in the corner of the W. Frizzle 88 acres, Section 4, Troy Township. In this same township, Hulse & Kundtz drilled in a very good gasser in a test in the southeast corner of the Ray Arnold 104 acres, Section 2.

Medina County

Eight completions were reported from Medina County. In Litchfield Township, the Globe Oil & Gas Co.'s test in the northwest corner of the George Kennedy 50 acres, in Lot 55, was a dry hole. In Spencer Township, the Logan Gas Co. found a duster at a test in the northeast corner of the Henry Mantz 62 acres, Section 2, and drilling No. 1 on the Grover Heilman 139 acres, Section 6.

In Liverpool Township, the Empire Gas & Fuel Co. has an average gas well at a test on the Charles Kinzey 41 acres, Lot 3, and drilling No. 2, same farm. The Logan Gas Co. brought in a fine gas well at a test in the northwest corner of the James Walters 86 acres, Lot 20, and the Ohio Fuel Gas Co. is drilling a test in the northeast corner of the George D. Dolamore 30 acres, Lot 4.

In Westfield Township, the Logan Gas Co. struck a light gas well at a test 750 feet from the north line and 700 feet from the west line of the O. E. Daniels 50 acres, Lot 23.

In Chatham Township, the Ohio Fuel Supply Co.'s No. 3 well, 1,200 feet from the north line and 150 feet from the west line of the L. A. Severcool farm, Lot 4, Section 7, for a dry hole at 345 feet, while No. 4 well, 1,500 feet from the north line and 450 feet from the west line of the same farm, is rated as a 20-bbl. oil well at 340 feet. E. R. Edson Sons Co.'s No. 17 well, 1,450 feet from the south line and 400 feet from the east line of the William P. Wetz farm, Lot 5, Section 14, same township, for a 1-bbl. well at 420 feet.

Empire Gas & Fuel Co. is drilling a wildcat in the northeast corner of the Nancy S. Sylvester 24 acres, Lot 54, Granger Township.

Wayne County

The Ohio Oil Co. drilled in a 10-bbl. oil producer in No. 4 well, 300 feet from the north line and 1,100 feet from the west line of the John M. Carroll farm, Section 4, and drilling a test 600 feet from the south line and 1,000 feet from the east line of the Albert Berger 145 acres, Section 29.

In Green Township, W. E. Hawk and others' second well on the C. S. and C. A. Eby farm, Section 6, is a dry hole. In Milton Township, the East Ohio Gas Co. has one of the same kind at a test in the northeast corner of the A. and E. Bodgaer 80 acres, Section 26. Same company is drilling No. 3 on the C. W. and L. B. Frick farm, Section 28.

In Congress Township, Glen Harmon and others got an average volume gas well at a test in the southwest corner of the C. W. Keener 155 acres, Section 31. Logan Gas Co. has a dry hole in a test in the southeast corner of the H. B. Holmes 154 acres, Section 32, and an average gas well at No. 4 in the northeast corner of the O. E. Frank 160 acres, Section 36, and drilling No. 5 same farm.

In Chester Township, the Logan Gas Co. struck a good gasser at a test in the southwest corner of the D. Hoenshal 29 acres, Section 18, and drilling a second test 740 feet from the north line and 443 feet from the east line of the W. A. Firestone 30 acres, Section 19. Klise-Eckstein-McCann Co. made a location for a test in the northeast corner of the P. Firestone 133 acres, Section 19.

In Baughman Township, the Logan Gas Co. struck a rank duster at a test in the southeast corner of the Lydia C. Garber 206 acres, Section 7.

Holmes County

Holmes County is showing a renewal of activity in the several townships that are producing both oil and gas from the deep sands. In Hardy Township, the Empire Gas & Fuel Co.'s No. 3 well, 300 feet from the north line and 1,274 feet from the east line of the Delphia Nethrow 162 acres, Lot 10, is reported good for 75 bbls. from the Clinton sand. This company has made a location for a test in the northeast corner of the Elizabeth Steel 57 acres, Section 2. East Ohio Gas Co. is drilling a test in the northwest corner of the Hugh McCullough 57 acres, Section 8.

In Monroe Township, the Empire Gas & Fuel Co. is drilling No. 3 in the northwest corner of the George W. Hanna farm, Lot 1. East Ohio Gas Co. is drilling No. 3 on the W. H. Geib 134 acres, Lot 7, and made a location for a test in the southwest corner of the Thomas S. Doty 160 acres, and for a test 400 feet from the north line and 1,050 feet from the east line of the M. J. Nyhart 40 acres, Section 1.

In Prairie Township, the Pure Oil Co.'s second well on the J. Clark Smith 87 acres, Section 17, is estimated at 35 bbls. Logan Gas Co. made a location for No. 3 well in the southwest corner of the Scott V. Mast 23 acres, Section 16.

In Paint Township, the Ohio Fuel Gas Co. has a good gas well at a second test in the southeast corner of the Isaac Y. Miller 45 acres, Section 5, and made a location for No. 3 well, 1,000 feet from the north line and 900 feet from the east line or the Isaac Y. Miller 300-acre farm, same section.

New work is springing up in Kilbuck Township and more activity is shown than at any previous time since the territory started producing the gas. The Leonard Oil & Gas Co.'s test in the southeast corner of the Alvin E. Patterson 46 acres, Lot 12, is estimated at better than 2,000,000 feet. East Ohio Gas Co. brought in a duster in a test in the southeast corner of the W. H. Morh 72 acres, Lot 13, and drilling No. 2 in the northwest corner of the Charles Allison 75 acres, Lot 19. Same company made a location for a second test in the northwest corner of the Byron A. J. Middaugh 160-acre farm, Lot 19, and for No. 2 in the southwest corner of the A. E. Patterson 46 acres, Lot 12, and drilling No. 1 in the northwest corner of the L. A. and E. Mohr 30 acres, same lot. Ohio Fuel Gas Co. made a location for a second test in the northeast corner of the C. P. Allison 40 acres, Lot 12.

Cuyahoga County

Nine completions are reported from the Cleveland Field, in Dover Township, Cuyahoga County. The best completion is that of the Logan Gas Co. at its test in the northeast corner of the A. Dunford 12 acres, Lot 15, while its No. 1 in the southeast corner of the G. Dunford 50 acres, lot 16, proved a dry hole. The next best completion was the Wiser Oil Co.'s No. 1 in the southeast corner of the G. W. Jenkins 50 acres, Lot 25, and this company also brought in a duster in No. 3 well, 510 feet from the south line and 300 feet from the west line of the G. M. Promfoot 63 acres. Dempsey Brothers also brought in one as good as the Wiser well at their No. 1 in the northeast corner of the L. M. Coe 19 acres, Lot 18. The Dempseys abandoned their location on the George Wargo 6 acres, Lot 27. Arthur & Simpson abandoned their location for No. 3 on the J. J. Sayles 35 acres, Lot 17, but are drilling at No. 2 on this farm. Same firm struck a nice gasser at No. 1 in the northwest corner of the J. Jenkins 4 acres, Lot 18. They brought in a duster at a test in the northeast corner

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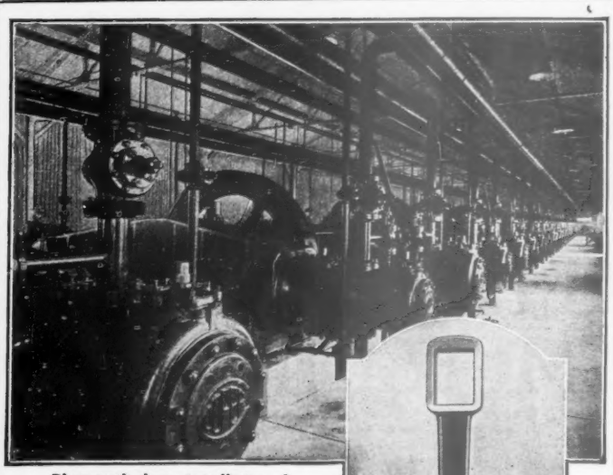

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of the H. Martin 30 acres, Lot 16, and another at a test near the southeast corner of the A. S. Knowles 18 acres, Lot 17. Same firm is drilling No. 1 in the northwest corner of the J. B. Harrison 60 acres, Lot 7.

Hulse & Kundtz, Cleveland operators, brought in an average gas well in the Newburg sand at a test in the northeast corner of the J. Jenkins 2 acres, Lot 18, and are drilling No. 2 in the northwest corner of the same property. J. W. Cushing is drilling No. 1 in the southeast corner of the L. Gimble 5 acres, Lot 27, and Groff Brothers are drilling No. 1 in the northwest corner of the W. H. Bell 3 acres, Lot 18.

Other Developments

In Carthage Township, Athens County, the Colmer Oil & Gas Co. has an average gas well at a test in the northwest corner of the Wilber Colmer 35 acres, Lot 25, the gas being found in the Maxon sand. The Logan Gas Co. has a light gas well at No. 5 on the J. W. Kincade farm, Lot 1, and also drilling a test on the A. M. and Florence Mooney farm, Lot 16.

In Waterloo Township, Athens County, the Sharon Oil & Gas Co.'s No. 1 in the southwest corner of the J. C. Hewitt 32 acres, Lot 23, with a production of 2 bbls. from the Berea sand.

Klise-Eckstein-McCann Co. is drilling a test in the southeast corner of the Joseph Batting 59 acres, Lot 13, Killbuck Township, Holmes County; also No. 1 in the northeast corner of the J. E. Beller 76 acres, Lot 19, same township.

Logan Gas Co. made a location for a test in the southwest corner of the John B. Foster 237 acres, Section 1, Jefferson Township, Cochocton County. Same company is drilling No. 2 on the H. E. and R. Babcock 190 acres, Section 15, Perry Township, same county.

Empire Gas & Fuel Co. made a location for a wildcat in the southwest corner of the Peter Lepley 78 acres, Lot 1, Monroe Township, Coshocton County, and the Ohio Fuel Gas Co. made a location for a test in the northwest corner of the Jonathan Grant 40 acres, Lot 2, same township.

SAGINAW COMPLETES FOUR MORE PRODUCERS

By Whit

SAGINAW, Mich, Nov. 5.—Only four completions were reported from the Saginaw Field during the week, all being within defined territory. The best was the Valley Oil & Gas Co.'s No. 2 on the Charles Priess property near Michigan Avenue and Madison Streets, in Carrollton. Top of Berea was found at 1,806 feet and drilled 17 feet in the sand, resulting in what shows for a 30-bbl. initial produced. The Local Petroleum Co.'s No. 1 on the Graham Sparling property, near Oakley Street, went to a depth of 1,815 feet and is estimated with a flush of 20 bbls., also in Carrollton district.

The Superior Oil Co.'s No. 1 on the Ben Wall property on the Hermansau Road, Saginaw Township, is estimated at 20 bbls. initial. Top of sand at 1,805 feet and drilled to a total depth of 1,825 feet. S. R. Dietrick and others' No. 1, on the Lodge-Strong property, also on Hermansau Road, is reported at 15 bbls. Top of the sand at 1,809 feet and drilled to a total depth of 1,823 feet and given an 80-quart shot.

People of Saginaw and vicinity had their first experience of a nitroglycerin explosion a few days ago. Herbert McMillen, the well-known shooter of the Independent Torpedo Co., was on his way to the magazine in the middle of a big field a short distance north of the Shattuck Road and north of Saginaw City, not far from the north end of the Saginaw oil pool, when he discovered the building was on fire. Knowing an explosion inevitable, he turned and ran. He flung himself face down on the ground behind a tree about 150 feet distant from the magazine, and a second later the ground rocked and shook under the blast. The magazine contained close to 400 quarts. He was on his way to get 60 quarts to shoot the well of the Local Petroleum Co. and abandoned the automobile within a very short distance of the magazine.

While the explosion rocked the entire north end of Saginaw, no one was killed. The only damage done was shaking things from shelves at various homes and breaking windows.

Close to half a dozen wells are nearing the depth to find the Berea sand within a week or so and many of the idle strings have started up, making the field a likely one.

The Sun Oil Co. has secured two leases in Blumfield Township, Saginaw County, being on 280 and 80-acre tracts owned by the Consolidated Coal Co.

Saval Development Co. is drilling No. 1 on the George Nentwig property, near Weiss and Eddy Streets. The Sun Oil Co. is drilling No. 5 on the John Schoenteit 20 acres, Section 11, Saginaw Township, also its No. 1 Louis Voight farm, near the Shattuck Road, Section 10, same township. Unknown parties have a rig building on the Stanley Gniotczynski property in Carrollton. J. H. Shaltry and others are drilling No. 1 J. C. Brechtelsbauer property near Michigan Avenue and Jackson Street, Carrollton.

Welding Society to Hold Fall Meeting In Buffalo, Nov. 16

The program of the fall meeting of the American Welding Society to be held at Buffalo, N. Y., November 16, 17, 18 and 19, has been announced as follows:

Wednesday, November 17

10 a. m. to 12 m. "Welding of Locomotive Parts." M. Gjersten, master welder, Northern Pacific Co. "Organization of Welding on the Railroad," F. H. Williams, assistant test engineer, Canadian National Railways.

2 p. m. to 4 p. m. "Comparative Tests on Arc and Riveted Structural Members," A. M. Candy, general engineer, Westinghouse Electric & Manufacturing Co. "Tests on Welded Roof Trusses," H. H. Moss, The Linde Air Products Co.

Thursday, November 18

10 a. m. to 12 m. "Welding Science in the Engineering Curriculum of Universities," Prof. G. J. Hoffman, Purdue University; Prof. E. L. Lucas, Mississippi Argicultural and Mechanical College; Prof. S. T. Hart, Syracuse University; Professor DeZafra, New York University; Prof. R. D. Rickley, Ohio State University; Prof. F. V. Larkin, Lehigh University.

1:30 p. m. Meeting of the Welding Wire Specifications Committee, C. A. McCune, chairman.

2:30 p. m. Meeting of the American Bureau of Welding.

7 p. m. Annual fall banquet.

Friday, November 19

9 a. m. to 10:30 a. m. "Welding in a Gaseous Atmosphere," demonstrations and exhibitions by F. P. Alexander and R. A. Weinman of the General Electric Co.

11 a. m. to 12:45 p. m. Meeting of the board of directors, American Welding Society, Hotel Statler.

1 p. m. Presidents' luncheon conference with all vice presidents and section representatives of Buffalo Athletic Club.

Headquarters

All technical sessions of the American Welding Society, the demonstrations and the Welding Exposition at Broadway Auditorium, 193 Broadway, Buffalo.

Banquet

A banquet and dance will be held Thursday evening at the Hotel Statler.

Inspection Trip

On Friday afternoon a trip to Niagara Falls has been arranged.

One of the largest welding expositions is being held in connection with this fall meeting showing new developments in welding apparatus and supplies. A unique feature of this exposition is an exhibit of a large variety of welded products. Several exhibits of European manufacturers are also included. The exposition will open on Tuesday afternoon, the day preceding the annual fall meeting of the society and will close on Friday. It will also be open on Tuesday and Wednesday evenings.

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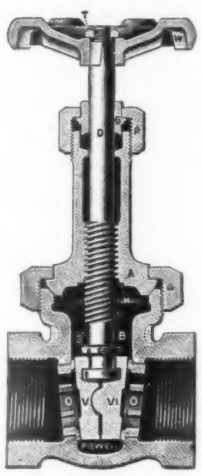

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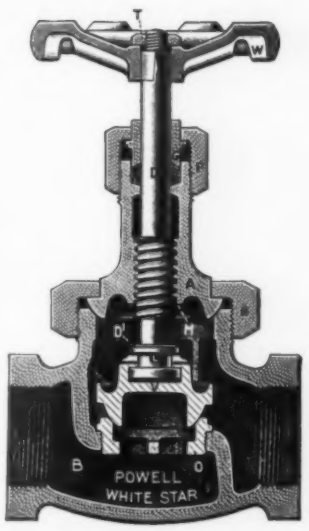
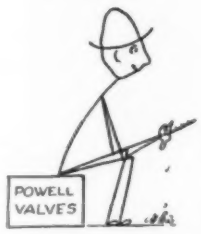


Old Rep Says:



It looks to me like the French are takin' Uncle Sam to an old fashioned snipe hunt on this debt business.

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Checking Gasoline Plant Operation

In Starting New Equipment Certain Tests Necessary to Determine Efficiency of Still, Absorber and Other Operating Features

By Frank P. Peterson

Eighth Article

When a new natural gasoline plant starts up it is necessary to determine whether there is the desired correlation of all phases of the plant's operation. Operating conditions vary even at similar type plants operating in the same field and very little can be taken for granted in starting operations.

To assure satisfactory operation it is necessary very carefully to check the operation, starting with the gas in the compressors and then following the vapor and liquid flows through the absorber, still and fractionating equipment. The oil circulation through the absorber and still is a very important phase of this problem.

In this article, Mr. Peterson continues his discussion of the necessary tests, telling how they should be made and what conclusions should be drawn. This is the eighth article by Mr. Peterson dealing with the operation of natural gasoline plants. The seventh article appeared in the November 4 issue (page 154).

For each new development of operation a set of limiting conditions, which might be termed operation constants, will be developed. Even assuming that a standardized line of equipment could be employed in all cases, varying factors governing or influencing the results of operation will be found to exist. The varying composition of gas will probably be the larger of these factors. Then there is no question but what, even in the same field, local variances of atmospheric cooling exist, so that temperatures available to one installation are not to another. Since there are no longer restraints in the range or extent of pressure to be applied on the gas, and since the equipment will usually stand a slight excess of pressure development beyond that specified, operation will make use of the maximum pressure available when other conditions such as cooling may fall short of expectations.

The range of pressure to be applied on the recycled vapor stream is particularly susceptible to variance of treatment for results to be measured in terms of over-all efficiency. If the field gas supply may run to predominance of propane-butane components, the latter detail will offer the most direct solution of control of stock characteristics. This leads, of course, into the stabilizer phase of the subject, to be treated a little later.

Laboratory Control

For the present we are concerned with the detail of laboratory control and adjustment of those constants above suggested for the development of and guidance to maximum operative efficiency. Very shortly after the stills have been fired, gasoline will appear in the receiver or "run down" tank after the condenser. Two other streams of product will appear simultaneously, both compression stocks, one being thrown down in the low accumulators from compressing and cooling of the field gas on its way to absorption, the other from recompressed vapors. It is desirable to know as early as possible the characteristics of stock product. It is obvious that since plant stock has the three components, field gas condensate, recycled vapor product and absorption stock to be blended into a final composite, the final stock cannot be measured in terms of its physical characteristics until a fairly settled condition of operation has been brought about. Some hours at any rate, and possibly a couple of days may be required after the actual start before dependable information can be had as to just what the plant may be, or is capable of, producing.

Experienced operators are able to estimate rather closely, however, the nature of a resulting product to be had from the bringing together of the three streams of stock from the characteristics observed of each separately.

The field or low stage accumulator and absorption stocks are easily measured as to gravity, stability, initial and final boiling temperatures, ("ends"), "vapor tension"; color, etc. This is not the case for the stock from recompressors, usually, since it will have such excess volatility characteristics as to make it difficult or impossible to get accurate measurement of the factors above noted, since they all affect the resulting composite product, we can best see what this will be by actual trial operation.

It is not possible, through any means known to the writer, to determine in advance the proper limit of recompressor pressure to be applied to any given end in terms of over-all product specification. The laboratory will concern itself first with the absorption element of performance, without neglect, however, of one other important detail of observation, namely, air dilution of the gas supply. This latter will be nil, of course, so long as flush field condition can supply gas at a pressure above atmospheric.

Oil Circulation

For the start, the superintendent or chief engineer will have selected and applied his best estimated rate of oil circulation in conformity with the performance of his compressors, since in advance of receipt of meter charts from the field, he will be dependent on his master meter indication checked against total compressor displacement to give him the volume passing through plant.

If air should be unavoidably present in the gas, no allowance will be made in the way of its deduction to determine applied rate of oil circulation. To determine at any moment the rate of oil circulation required, it is only necessary to take off the master meter, or the computed compressor displacement, the gas rate in terms of thousands of cubic feet per hour; multiply this by the selected rate—gallons absorbent oil per thousand cubic feet gas—and adjust the differential indication in the oil meter to conform. In anticipation of this detail, it is best to make up beforehand a tabulated set of meter differential factors to apply, headed thus:

Oil Circulation at Rate of (R) G.P.M.

Meter Differential Reading	Gallons Per Hour

in which (R) is stated in numerals and the corresponding values are computed and set up under the two column headings provided. It then becomes a matter only of adjustment to an hourly rate of oil circulation within the range of orifice plate of the meter by merely adjusting the speed in the case of reciprocating, or throttling the discharge in the case of centrifugal pumps.

Absorber and Still

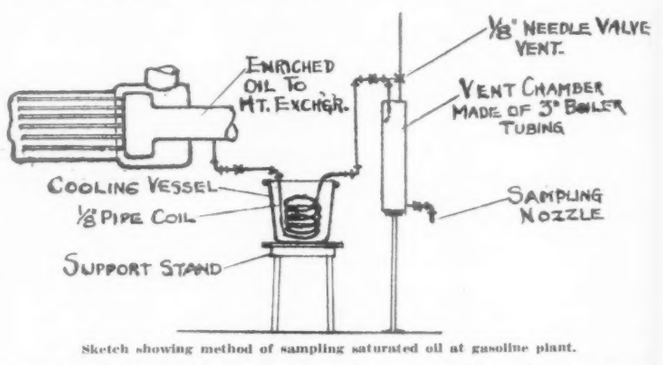
The next step is observation of absorber and still performance.

If the absorbers are functioning properly, the gas residue from them will be efficiently stripped of gasoline. And this efficiency will depend upon the condition of the oil entering and leaving the absorbers. If it is not sufficiently denuded or desaturated at entry, or, if it is excessively saturated at removal, the absorption will be inefficient and the checking of these conditions must begin immediately following the start of operation.

Knowing the initial boiling temperature of the oil in use, the laboratory may usually apply a temperature within 100 degrees Fahrenheit of the initial boiling point of the absorbent oil in examination of the saturation factors of the oil in circulation. A better guide, however, will be the behavior of the oil in the distillation flask. Under proper manipulation, a definitely observable ring of the oil in the flask will be seen to rise in the neck and approach the side tube outlet opening. This rise may be controlled as desired and it should not be allowed to rise more than about 1 inch or one-third of the neck space between flask body and side outlet. At such indication of the oil, the distillation should be stopped. The method applies for all conditions of oil saturation from stripped, as sampled before absorbers, to maximum saturation, as sampled before heat exchangers. The methods of sampling the saturated oil is important. In order to get dependable results, a sampling nozzle should be provided at the end of a small coil made of ¼ or ⅜-inch pipe, and this coil should be placed in a vessel (an ordinary pail will do) in such manner that it can be effectively cooled at the time a sample is withdrawn. Also, a vent chamber is a good provision. It is somewhat easier to indicate in a sketch than to describe the arrangement:

Still Performance

The performance of stills will be governed from laboratory examination of the oil as it leaves them. Beyond an occasional test of this oil before and after heat exchanger passage to determine if there might be leakage through the tube walls and a consequent mixing of the streams of saturated and stripped absorbent, samples of the stripped oil are best obtained after the oil cooler or at entry to the absorbers. Efficient operation will be approached as the saturation factors in the enriched and stripped phases of the oil in its cycle are brought below 7.0 per cent and 0.7 per cent, respectively, for ordinary conditions.



Sketch showing method of sampling saturated oil at gasoline plant.

Cases of exception may be found where the component gasoline constituents to be removed from the gas run low in butane and propane material. In such cases, the saturation factor (enriched), may be carried higher. The limit to which it may be carried will depend upon and be governed by the condition of the tail or residue gas from the absorbers. For the average condition of operation unless excellent temperatures may be maintained in the stripped oil entering absorbers, a saturation in excess of 7.0 per cent will reflect an objectionable rise of tail gas gasoline content.

In fact, a lower saturation factor, 5.0 to 6.0 per cent, will be found prevailing in most cases of efficient operation. And with reference to temperature in the stripped oil stream going to absorbers, it is pretty conclusively demonstrated that 90 degrees Fahrenheit is a limit above which it will be difficult to effect good stripping of the gas. In one specific instance the writer has been able to observe a direct falling off in operating efficiency of a plant when the stripped oil temperature was permitted to rise above 86 degrees Fahrenheit. No limitation is to be made in effort to reduce the stripped or lean oil saturation factor.

A very pretty theory is disclosed by Oberfell in deductions from the laws of Henry and Dalton which points to the conclusion that the losses in operating efficiency chargeable to residue gas content escaping operation are measurable in terms of the most stable component fractions sought in plant product. Be this as it may, and its perception will probably be somewhat obscured to some students, there is no contention whatever for allowing the stripped saturation factor to rise above the practical minimum obtainable. One half of 1 per cent is a good low average for efficient operation. Four-tenths of 1 per cent would seem to be about a fair limit to be sought without exceeding in capacity the limits of design of still equipment previously suggested. This limit will be governed largely by endpoint limitation of the stock produced. Since the cut between distillate fraction and still residuum cannot be made sharply conforming to product end it will be seen that some gasoline must always remain present in the absorbent oil.

On first consideration it would appear that a definite check for estimation of plant output might be had from computing the difference in percentage saturation of the oil in cycle against its total volume, i.e., per cent enriched saturation minus per cent stripped saturation times the volume of oil circulated should equal plant production, and the same factor times the rate, gallons per thousand, of oil circulation should give the plant yield, gallons per thousand, of the gas used. This, however, does not hold true in practice and the result so computed usually falls well within actual plant yield.

Assuming the absorbers are functioning properly, that no channeling occurs in the flow of either oil or gas through them, and that the rates of flow of gas and oil therein are fairly constant, there is little to be done further. The matter of efficiency of the absorption phase of operation will be controlled through the stills, the knockout or dephlegmator tower and, of course, effective cooling of the oil in its circuit.

Firing Stills

Direct fired stills, with steam admitted for effective stripping of the oil, offer two

(Continued on Page 112)

Panhandle Passes 152,000 Barrel Mark

Hutchinson County Gains 10,095 Bbls., Gray County 1,325. Another Increase in Output Expected Next Week

By C. D. Lockwood
Staff Correspondent, Panhandle Field

As predicted last week, the Texas Panhandle production took another leap, this time passing the 150,000-bbl. mark. Large wells in the Hutchinson County Field were mainly responsible although Gray County helped out materially with a 1,325-bbl. gain and Carson and Wheeler Counties also added a little. Hutchinson County's increase, however, amounted to 10,095 bbls. The total for the district this week was 152,105 bbls. And another deluge of big wells in the breaks of the Canadian presages a further rise next week.

The Pampa Pool, in Gray County, came to the front with some large wells this week. The Wilcox-Pampa Oil Co's No. 13 Worley & Reynolds, NW cor, SW, Section 62, Block 3, was good for 2,000 bbls. when deepened drom 2,876 to 2,882 feet in pay topped at 2,863 feet. Same company's No. 14 came in for 90 bbls. an hour in granite wash at 2,938-50 feet. It had a slight spray of oil also at 2,872-2,908 feet. The Gulf Production Co.'s No. 5 Worley, reported in the late news last week, flowed 1,140 bbls. from total depth of 2,936 feet. This is in the NE cor. NW SE, Section 83. Gulf's No. 1 A. Holmes, NE cor. NW SE, Section 87, was completed when it swabbed 65 bbls. in 24 hours following a shot, total depth being 3,176 feet; No. 1 Merten, SE cor. Section 88, extended production to the northwest about a quarter of a mile when it swabbed 140 bbls. from 3,250 feet and was pulling big pipe to pump; No. 3 Worley, SE cor. Section 83, flowed 325 bbls. the first 14 hours at 3.002-08 feet. Top of granite was 2,995 feet.

Gray County Wildcats

Among the wildcatters in Gray County, several claimed important attention. Gulf Production Co.'s No. 1 McConnell, CNL NW, Section 175, Block 3, swabbed 27 bbls. in 6 hours at 3,132 feet in granite wash topped at 3,110 feet, but drilled on through it and Monday was drilling in granite wash at 3,170 feet. The showing that this well made at 3,132 feet is reported to have caused the Roxana Petroleum Corp. to spend $25,000 in cash and an equal amount in oil for the west half of the NE Section 175. This is 5 miles west of Pampa.

About 5 miles east of the Pampa Pool, Roxana Petroleum Corp.'s No. 1 Finley, in the B. E. Cheney Survey, was shut down for orders with 200 feet of oil in the hole. The first show was found at 2,907-76 feet and the second pay was encountered at 3,018 feet in sandy lime.

Phillips Petroleum Co.'s No. 1 Merten, SW cor. NE, Section 82, Block 3, responded nicely to a heavy shot. It was given 260 quarts at 3,042-3,150 feet and flowed 455 bbls. of 43 gravity oil in the first 13 hours. Magnolia Petroleum Co.'s No. 4 Merten, NE cor. SW, Section 82, Block 3, shot with 210 quarts at 2,972-3,062 feet, total depth, 3,080 feet, and flowed 15 bbls. per hour; No. 8, SW cor. SE, same section, was flowing 6 bbls. an hour at 2,940-60 feet and drilling deeper; No. 11, east offset to No. 4 was shot with 60 quarts at 2,996-3,030 feet and lost the tools. Empire Gas & Fuel Co.'s No. 1 Worley, SW cor. SE, Section 63, flowed 200 bls. in 15 hours following a shot of 200 quarts at 2,966-3,040 feet. McMan Oil & Gas Co.'s No. 8 Worley & Reynolds, SE cor. SW NE, Section 83, swabbed 120 bbls. in 8 hours from lime at 2,928-40 feet.

Carson County

In Carson County, Republic Production Co.'s No. 1 Jordan, Section 103, Block 4, was deepened to 3,138 feet and gauged 47 bbls. Monday. It was being prepared for a shot Tuesday. White Deer Oil Co. staked a location in the SE NE, Section 104, Block 4, and will probably start up on it soon.

Prairie Oil & Gas Co. staked a new location in Carson County, near the Gray County line, which adds another link to the chain of tests between the Gray County Pool and Hutchinson-Carson area. The new one is No. 1 McConnell, 330 feet from the north line and 990 feet from the east line of SE of Section 67, Block 4. It is about 2 miles due west of Young & Patrick's No. 1 Bynum, the old gasser, and 4 miles southeast of Roxana's No. 1 Bryan.

Hutchinson County

In Hutchinson County, S. D. McElroy's No. 4 Smith flowed 1,475 bbls. the first 12 hours after drilling out the bridge. Westex Oil Co.'s No. 9 Whittenburg, SE of Section 13, Block Y, flowed 2,308 bbls. in 12 hours after a 60-quart shot at 2,895-2,955 feet. Phillips Petroleum Co. and Gibson & McMillan's No. 3 Whittenburg, Lot 25, Caperton & Williams Subdivision, which was completed late in September for 400 bbls. at 2,893 feet, was shot with 80 quarts at 2,862-98 feet and started off flowing 75 bbls. an hour, 30 per cent water. Prairie Oil & Gas Co.'s No. 3 Johnson-B, SW cor. 160 acres in Section 19, Block 46, flowed 1,000 bbls. from lime at 2,902-17 feet and will be deepened as soon as sufficient storage is erected.

Gulf Production Co.'s No. 2 Cockrell flowed 350 bbls. after a 290-quart shot at 2,882-2,960 feet; No. 11 E. B. Johnson pumped 60 bbls. at 2,940 feet; No. 30 Dial flowed 800 bbls. at 2,975 feet.

McMan Oil & Gas Co.'s No. 4 Johnson-Martin Gray, in SE cor. SE NE, Section 21, Block Y, was reported to have started at 220 bbls. an hour when deepened to 2,938 feet, top of pay 2,928 feet, but later decreased to 135 bbls. an hour. McMan Oil & Gas Co.'s No. 7, in the NW cor. NE, Section 5, Block Y, flowed and swabbed 30 bbls. an hour after a 220-quart shot at 2,717-72 feet.

Moore County hopes received a slight jolt when Prairie Oil & Gas Co.'s No. 1 Sneed, Section 26, Block 6-T, encountered 1,500 feet of salt water at 3,030-40 feet.

In Hutchinson County, Shamrock Petroleum Co.'s No. 1 Merchant, Section 37, Block 47, was spraying oil and shut down for orders at 2,715 feet. Goldelline Oil Co.'s No. 1-H Whittenburg, Section 15, Block XO2, swabbed 35 bbls. and shut down at 3,042 feet.

Pampa Pool Drilling

Following is a drilling report of wells in the Pampa Pool, Gray County:

Humble Oil & Refining Co.'s No. 1 Merten, Section 87, drilling at 3,050 feet; No. 2, standardizing at 2,460 feet; No. 3, standardizing at 2,491 feet; No. 4, drilling at 2,814 feet; No. 5, all in same section, drilling at 2,184 feet; No. 1 Osborne, Section 86, drilling at 2,449 feet; No. 1 Worley & Reynolds, Section 83, drilling at 2,972 feet and 100 feet of oil in the hole, top of granite wash 2,940 feet; No. 3 running 6-inch at 2,965 feet; No. 3, standardizing at 2,458 feet; No. 4, standardizing at 2,452 feet; No. 5, drilling at 2,252 feet; No. 6 all in same section, drilling at 2,134 feet. Magnolia Petroleum Co.'s No. 1 A. Holmes, Section 106, cellar; No. 2 Merten, Section 82, drilling at 2,300 feet; No. 3, drilling at 2,255 feet; No. 4, flowed 15 bbls. per hour for 24 hours and sanded up at 3,080 feet; No. 5, drilling at 785 feet; No. 7, fishing casing; No. 8, flowed 6 bbls. at 2,940-60 feet and drilling deeper; No. 9, cleaning out at 3,077 feet; No. 10, drilling at 2,710 feet; No. 11, shot with 60 quarts at 2,996-3,020 feet and total depth 2,150 feet and bridged; No. 12, drilling at 2,650 feet; No. 13, drilling at 2,275 feet; No. 14, drilling at 2,415 feet; No. 15, drilling at 2,425 feet; No. 16, rig; No. 17, all in same section, spudded and shut down. Marland Oil Co.'s No. 1 Benton, Section 63, cleaning out at 2,160 feet. McMan Oil & Gas Co.'s No. 1 Merten, Section 87, underreaming 6-inch at 3,170 feet; No. 2 Worley & Reynolds, Section 83, drilling at 2,545 feet; No. 3, shut down at 2,436 feet; No. 4, 100 feet total depth 3,125 feet, and 300 feet of oil in the hole; No. 5, shut down for orders at 2,020 feet; No. 6, standardizing at 2,458 feet; No. 7, standardizing at 2,458 feet; No. 8, all in same section, 2,928-40 feet, swabbed 120 bbls. in 8 hours. Phillips Petroleum Co.'s No. 1 H. M. Davis, Section 86, drilling at 2,250 feet; No. 1 J. H. Merten, Section 87, location; No. 1 Merten Brothers, Section 82, shot with 260 quarts at 3,042-3,150 feet and cleaning out; No. 2, same section, 3,000-3,136 feet, total depth 3,162 feet, 3,000 feet of oil in the hole; Prairie Oil & Gas Co.'s No. 2 Merten, Section 82, total depth 3,093 feet and 1,500 feet of oil in the hole; No. 3, standardizing at 2,470 feet; No. 4, standardizing at 2,476 feet; No. 5, all in same section, standardizing at 2,446 feet. No. 2 Worley & Reynolds, Section 83, standardizing at 2,415 feet; No. 3, standardizing at 2,470 feet; No. 4, standardizing at 2,456 feet; No. 5, stand-

WILDCAT OPERATIONS IN PANHANDLE

Week Ending October 16, 1926

ARMSTRONG COUNTY

Company, Well, Farm Name, Section and Block—
Red Hill Corp.'s No. 1 Puckett Bros., Section 3, Hooper & Wade Sur. ..... Shut down 1,750 ft.

BRISCO COUNTY

Smith & Baker's No. 1 J. W. Owens, Section 11, Blk. GC&SF, New Loc., NE cor. Sec. 11, Blk. S.

CARSON COUNTY

Amatex Oil Co.'s No. 5 [illegible] Section 92, Blk. 4, ... Shut down 1,940 ft.
Champlin [illegible] Section 92, Blk. 4, ... Location
Empire [illegible] No. 1 Burnett, Sec. 42, Blk. ... Shut down 4,162 ft. spudding 7[illegible]

Roof is Best
you find Butler
Bolted Tanks!

A battery of Butler Bolted Tanks of the American Refining Co., near Borger, Texas.

Another battery of Butler Bolted Tanks used by the Dixon Creek Oil Co., near Borger, Texas

These bolted tanks at the left show that Butler storage is on duty where oil production is enormous as well as in other places.

FEWER SHEETS AND SEAMS

The sheets in Butler Bolted Tanks are large — larger than ordinary. Fewer sheets are needed. There are fewer seams and fewer chances for leaks! Erection is quicker.

ACCURATELY PLACED HOLES

Holes in an entire Butler body sheet are punched at one time! Massive machines are used to punch all holes in all Butler Sheets.

In the Panhandle and elsewhere Butler service is speedy and reliable. Call on your nearest Butler dealer or us for complete information.

These reliable dealers erect Butler Bolted Tanks and are ready to serve you speedily:

M. & V. Tank Company, at Wichita Falls, Vernon, Olney, Nocona, Panhandle, Cross Plains and Amarillo, Texas.

Drane-Humphrey Co., at San Angelo, Big Lake and McCamey, Texas, and Carlsbad, New Mexico.

Drane Tank Company at Tulsa and Holdenville, Oklahoma, Eldorado and Madison, Kansas.

M. A. Trimmer, at Blackwell, Oklahoma.

Southern Steel Company at San Antonio and Mirando City, Texas.

Los Angeles Mfg. Co., at Los Angeles, California.

Petroleum Specialties Co., at Casper, Wyoming.

Thomas Moran, at Oil City, Shreveport and Georgetown, Louisiana.

Continental Supply Co., at Kevin, Montana.

G. I. Gillespie, 32 Fenchurch St., London, E. C. 3, England.

Any kind of welded tank made to your specifications.

BUTLER MANUFACTURING CO.

Kansas City, Mo. Minneapolis, Minn.

Foreign Dept.: 44 Whitehall Street, New York City, N. Y.

Six 150-ton Brine Coolers with wooden lagging. Exchangers are shown in the background.

A 900-ton Carbondale Absorption Machine installation at the Sinclair Refining Co., East Chicago, Ind.

Sinclair standards and Carmaco

To maintain the Sinclair standard of lubrication requires a refining process that is dependable in every detail.

The distillate "thruput" is chilled uniformly, with minimum friction losses, by the counter current principle. The required temperatures are maintained by the use of reliable refrigeration.

Carbondale Refrigerating Machinery has, for years, been satisfying these demands, not only in the production of Sinclair Oils, but also in most of the other leading refineries. Some installations are still giving dependable service after more than 30 years of usefulness.

CARBONDALE MACHINE COMPANY
Carbondale, Pa.
Branches in Principal Cities

Carbondale Products

CARMACO COMPRESSION SYSTEM USING FEATHER VALVE (Reg. U. S. Pat. Off.) COMPRESSOR

CARMACO EXHAUST STEAM ABSORPTION SYSTEM

CARMACO RAW WATER ICE-MAKING SYSTEM

AUTOMATIC SELF-CONTAINED REFRIGERATORING UNITS

REFRIGERATING EQUIPMENT FOR OIL REFINERIES

SPIRA-FLO CONDENSERS

—o—

Ammonia Compressors
Condensers
Brine Coolers
Generators and Analyzers
Rectifiers
Absorbers
Exchangers
Chilling Machines
Filter Presses and Blankets
Sweating Pans
Agitators
Air Eliminators
Dehydrators
Ice Can Fillers
Forged Steel Fittings and Valves
Accessories for refrigeration systems of every type.

Carbondale Refrigeration for Refiners

TANKWAGON PRICE IN FIFTY CITIES LOWEST SINCE MARCH ON NOVEMBER 1

Based on postings in the 50 representative cities compiled by The Oil and Gas Journal, the average tankwagon price of gasoline in the country on November 1 was 18.317 cents. This was the lowest average on any first day of the month since March 1, when the average was 17.267 cents. It was a reduction of 0.85 cent from the figure of October 1, which was 19.167 cents.

The low average was a result of general tankwagon reductions in all marketing territories during October brought about by weak refinery markets and slow domestic demand for gasoline. The month was marked by weather unfavorable to heavy gasoline consumption and with low refinery price and wide margins retail price wars and cutting of tankwagon postings naturally followed.

Tankwagon prices on November 1 a year ago averaged 15.528 cents, or 2.792 cents under the average on November 1, this year. However, this was due largely to the fact that crude prices and also refinery prices of gasoline were on a lower level than this year.

Tankwagon prices in the 50 cities and dates of changes during October are shown in the following table:

AVERAGE TANKWAGON PRICE IN 50 CITIES

November 1	15.528
December 1	15.763
January 1, 1926	16.133
February 1	16.213
March 1	17.267
April 1	18.517
May 1	18.487
June 1	19.607
July 1	19.697
August 1	19.697
September 1	19.587
October 1	19.167
November 1	18.317

GASOLINE PRICES EFFECTIVE NOVEMBER 1, 1926

Table showing gasoline tankwagon prices as of November 1, 1926, exclusive of taxes, in 50 representative cities, including the amount and the date of changes since October 1, 1926. High and low prices and state taxes also given.

	Prices Oct. 1	October Changes			Prices Nov. 1	High and Low 1926		High and Low 1924		Taxes July 1 1926
Birmingham, Ala.	20.0	....	13 19.0	....	19.0	20.0	13.0	20.0	13.0	2.0
Phoenix, Ariz.	19.0	1 19.0	....	....	19.0	20.0	18.0	20.0	16.0	3.0
Little Rock, Ark.	18.0	....	20 17.0	....	17.0	19.0	12.0	18.0	13.0	4.0
San Francisco, Calif.	13.0	1 13.0	....	....	13.0	15.0	13.0	15.0	11.0	2.0
Denver, Colo.	20.0	....	....	27 19.0	19.0	20.0	12.0	19.0	12.0	2.0
Hartford, Conn.	21.0	....	13 19.0	....	19.0	21.0	15.0	20.0	13.0	2.0
Dover, Del.	20.0	....	13 19.0	....	19.0	21.0	15.0	20.0	14.0	2.0
Jacksonville, Fla.	19.0	....	13 18.0	....	18.0	19.0	12.0	19.0	12.0	4.0
*Atlanta, Ga.	21.0	....	13 20.0	....	20.0	21.0	14.0	19.0	11.0	3.5
Boise, Idaho	24.0	2 22.0	....	....	22.0	21.5	19.0	22.5	18.0	3.0
Peoria, Ill.	19.2	....	....	26 18.2	18.2	19.2	10.5	18.2	13.0	...
†Chicago, Ill.	18.0	....	....	26 17.0	17.0	18.0	13.0	18.0	13.0	...
Indianapolis, Ind.	19.2	....	....	26 18.2	18.2	19.2	13.2	18.2	13.2	3.0
Des Moines, Iowa	19.5	....	....	26 18.5	18.5	19.5	13.5	18.5	13.5	2.0
†Wichita, Kans.	16.8	....	....	26 15.8	15.8	18.8	8.8	17.8	12.8	2.0
Louisville, Ky.	17.0	1 17.0	....	....	17.0	19.0	12.0	19.0	12.0	5.0
New Orleans, La.	17.5	....	19 15.5	....	15.5	18.5	11.5	16.5	11.5	3.0
Augusta, Me.	21.0	....	....	....	21.0	22.0	15.0	19.0	13.0	3.0
Baltimore, Md.	19.0	....	20 18.0	....	18.0	19.0	13.0	19.0	13.0	3.0
Springfield, Mass.	21.0	....	13 19.0	....	19.0	21.0	15.0	20.0	13.0	...
Detroit, Mich.	19.8	....	....	26 18.8	18.8	19.8	13.8	18.8	13.8	2.0
Duluth, Minn.	20.5	....	....	26 19.5	19.5	20.5	13.5	19.2	14.5	2.0
Natchez, Miss.	18.5	....	13 17.5	....	17.5	18.5	11.5	18.5	11.5	4.0
**Kansas City, Mo.	18.9	....	....	26 17.9	17.9	18.9	12.9	17.9	11.9	3.0
Helena, Mont.	24.0	....	....	27 23.0	23.0	24.0	18.0	23.0	18.0	2.0
Omaha, Neb.	19.25	....	....	26 18.25	18.25	19.25	10.0	18.25	11.0	2.0
Reno, Nev.	16.5	1 16.5	....	....	16.5	18.5	16.5	18.5	14.5	4.0
Newark, N. J.	19.0	....	20 18.0	....	18.0	19.0	13.5	19.5	13.5	...
Albuquerque, N. M.	25.5	....	....	27 24.0	24.0	23.5	19.5	23.0	18.0	3.0
New York, N. Y.	21.0	....	....	....	21.0	22.0	15.0	20.0	14.0	...
Charlotte, N. C.	19.5	....	20 19.0	....	19.0	20.0	12.0	19.0	12.0	4.0
Fargo, N. D.	21.9	....	....	26 20.9	20.9	20.9	14.9	19.6	14.9	2.0
Cleveland, Ohio	20.0	....	....	....	20.0	18.5	15.0	20.0	15.0	2.0
Tulsa, Okla.	17.0	2 15.0	....	....	15.0	18.0	9.5	18.0	9.5	3.0
Portland, Ore.	13.0	1 13.0	....	....	13.0	15.0	13.0	15.0	12.0	3.0
‡Philadelphia, Pa.	20.0	....	12 19.0	....	19.0	21.0	15.0	20.0	14.0	2.0
Providence, R. I.	21.0	....	13 19.0	....	19.0	22.0	15.0	20.0	13.0	1.0
Charleston, S. C.	19.5	....	20 19.0	....	19.0	20.5	12.5	19.0	12.5	5.0
Huron, S. D.	20.5	....	....	26 19.5	19.5	20.0	13.0	20.0	15.0	3.0
Memphis, Tenn.	17.0	....	....	....	17.0	18.0	10.5	18.0	12.0	3.0
§Dallas, Tex.	13.0	....	....	....	13.0	18.0	10.0	17.0	9.0	1.0
Salt Lake City, Utah.	20.5	....	....	....	20.5	21.5	17.5	21.5	16.5	3.5
Burlington, Vt.	21.0	....	....	....	21.0	22.0	15.0	19.0	13.0	2.0
Norfolk, Va.	19.0	....	20 18.0	....	18.0	20.0	14.5	19.0	14.5	4.5
Washington, D. C.	19.0	....	20 18.0	....	18.0	19.0	14.0	19.0	14.0	2.0
Charleston, W. Va.	18.0	....	20 17.0	....	17.0	19.0	14.0	19.0	14.0	3.5
Milwaukee, Wis.	19.1	....	....	26 18.1	18.1	19.1	13.1	19.1	13.1	2.0
Casper, Wyo.	20.0	....	....	27 19.0	19.0	20.0	14.0	19.0	14.0	2.5
Seattle, Wash.	13.0	1 13.0	....	....	13.0	15.0	13.0	16.0	12.0	2.0
Minneapolis, Minn.	20.2	....	....	26 19.2	19.2	20.2	13.2	18.9	12.0	2.0
Average price	19.167	....	....	....	18.317	19.647	13.629	18.989	13.27	2.45

*Does not include ¼-cent inspection fee. †Dump of less than 100 gallons at Chicago and 50 gallons at Wichita 1 cent higher. ‡Tax paid by retail dealer. §Prices on 3-cent discount from service station posting as no tankwagon schedule is maintained in Texas. **State tax 2 cents, city tax 1 cent.

READING-PRATT & CADY *Oil Service* VALVES *and* FITTINGS

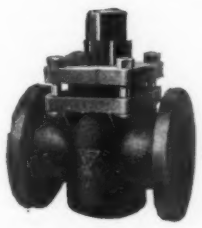
Fig. 125
Standard Iron
Body Gate Valve

Pratt & Cady
Fig. 164
Extra Heavy
Gate Valve

Reading
Series 40
Steel
Gate Valve

Class O
Steel Screwed
Cross

Reading
Series 15
Steel Flanged
Tee



Reading
Fig. 240
Asbestos
Packed Cocks

Stocked by:
Reading Steel Casting Company, *Inc.*, Tulsa
Norvell-Wilder Hardware Co., Beaumont,
Houston, Shreveport, Fort Worth
Woodward, Wight & Co., *Ltd.*, New Orleans

READING STEEL CASTING COMPANY, *Inc.*
An Associate Company of the American Chain Company, Inc.
Bridgeport, Connecticut

Offices and Warehouses: Boston Charlotte Chicago
Cleveland Detroit Hartford Houston New York
Philadelphia Pittsburgh Rochester St. Louis
San Francisco Tulsa

Booth 48—Power Show—Grand Central
Palace—New York
December 6th to 11th, 1926

READING *for* **steel**
PRATT & CADY *for* **iron** *and* **bronze**
specializing for quality valves AND *fittings*

THESE power heads are totally enclosed, self-lubricating, with gears operating immersed in a bath of oil, making a very quiet and smooth running power head.

The massive main frame serves as a compact housing and a rigid support for all the working parts. The main gear is driven through a pinion which actuates a crank shaft, which in turn actuates an all-steel walking beam which operates the crosshead. This power head may be slid back upon its base, which permits the removal of the rods and drop pipe without tearing down the installation or disturbing the pipe connections.

While illustration shows motor drive, these power heads can also be successfully operated with a gasoline engine.

They are made in both 18-in. and 24-in. stroke

These heads are more fully described in bulletins, furnished on request.

BRANCH OFFICES:

Chicago, Ill. . . . . First National Bank Building
Milwaukee, Wis. . . . Wisconsin National Bank Building
New York, N. Y. . . . . 165 Broadway
Dallas, Texas . . . . . Western Indemnity Building
San Francisco, Calif. . . . . 635 Mission Street

DISTRICT SALES AGENCIES:

Philadelphia, Pa.	Omaha, Nebr.	Birmingham, Ala.	Salt Lake City, Utah
Pittsburgh, Pa.	St. Louis, Mo.	Jacksonville, Fla.	Phoenix, Ariz.
Cleveland, Ohio	Kansas City, Mo.	New Orleans, La.	Los Angeles, Calif.
Detroit, Mich.	Joplin, Mo.	Roswell, N. Mex.	Charlotte, N. C.
St. Paul, Minn.	Atlanta, Ga.	Denver, Colo.	Calgary, Alta., Can

GENERAL OFFICE AND WORKS: AURORA, ILL.

The American Well Works

NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

TEXAS PANHANDLE

Carson County

Southwestern Oil & Refining Co.'s No. 1 C. R. Garner, 330 feet north and west SE cor. north half of NW Section 105, Block 4, L. & G. N. Survey. White Deer Oil Co.'s No. 2 Jerdan, Brown and others, 300 feet north and west of SE cor. NE Section 104, Block 4, I. & G. N. Survey.

Gray County

The Texas Company's No. 1 H. M. Barrett, at center SE Section 131, Block 3, I. & G. N. Survey; No. 1 O. N. Fashier, 330 feet south and west NE cor. NW SW, Section 162, Block 3, I. & G. N. Survey. Wilcox-Pampa Oil Co.'s No. 15 Worley & Reynolds, 330 feet south and east of NW cor. Section 61, Block 3, I. & G. N. Survey; No. 16, 330 feet south and west of NW cor. Section 84, Block 3, same survey; No. 17, 990 feet south and 330 feet east NW cor. SW Section 62, Block 3, same survey; No. 18, 1,650 feet south and 330 feet east of NW cor. SW, same section.

Hansford County

Caldwell and others' No. 1 J. Adriance estate, 660 feet north and east of SW cor. Section 21, Block 3, G. H. & H. Survey.

Hutchinson County

Derby Oil Co. and others' No. 5 Johnson Brothers, 330 feet north and east of SW cor. of N half of SW Section 20, Block Y. Great Western Oil Co.'s No. 1 T. D. Lewis, 330 feet south and west of NE cor. SW Section 6, Block 23, B. S. & F. Survey. Marland Oil Co.'s No. 1 Johnson Brothers-B, 330 feet north and west of SE cor. W half of north 160 acres, Section 69, Block 46, H. & T. C. Survey; No. 2, 330 feet north and east of SW cor. W half of same north 160 acres; No. 2 River Bed, 433 feet north, 48 degrees, 59 minutes, east of NW cor. Section 69, Block 46, H. & T. C. Survey, and located in bed of the Canadian River; No. 3, 1,055 feet south and 51 degrees, 30 minutes west of SE cor. of Section 22, Block 47, H. & T. C. R. R. Co. Survey, and located in same river bed; No. 1 J. A. Whittenburg-B, 330 feet north and west of SE cor. north 120 acres of south 440 acres of Section 67, Block 46, H. & T. C. Survey; No. 2, 330 feet north and east of SW cor. of north 120 acres of same 440 acres. Phillips Petroleum Co.'s No. 8 J. J. Perkins-Martin, 1,012 feet north and 910 feet west of SE cor. west 240 acres of S half of Section 1, Block X02, H. & O. B. Survey; No. 9, 990 feet south and 995 feet west of NE cor. west 240 acres of S half of same section; No. 10, 330 feet south and 995 feet west of NE cor. west 240 acres of S half of same section; No. 9 J. A. Whittenberg-Elra, 330 feet south and east of SW cor. Section 69, Block 46, H. & T. C. Survey, and located in E. T. Tumlinson Survey, No. 3; No. 10, 330 feet south and 445 feet west SE cor. Section 70, Block 46, H. & T. C. Survey, and located in same section. Phillips Petroleum Co. and Coble Oil Co.'s No. 21 J. A. Whittenberg, 330 feet north and west of SE cor. NW, Section 13, Block Y; No. 22, 330 feet north and 990 feet west of SE cor. NW, same section. Prairie Oil & Gas Co. and others' No. 6 Johnson Brothers-B, 330 feet south and west of NE cor. east 100 acres, north 200 acres, Section 4, Block B-4, D. & S. E. Survey. The Texas Company's No. 1 T. D. Lewis, 330 feet north and west of SE cor. W half Section 5, Block 23, B. S. & F. Survey. Travelers Oil Co.'s No. 3 W. L. Kingsland, 280 feet south and 330 feet east NW cor. south 60 acres, east 240 acres of N half of Section 6, Block Y; No. 4, 330 feet south and west of NE cor. of south 60 acres, east 240 acres, N half of same section; No. 5, 330 feet south and 1,194 feet west NE cor. south 60 acres, east 240 acres, N half of same section.

Wheeler County

Angus and others' No. 1 L. C. Burcham, 330 feet south and west NE cor. SW Section 91, Block 17, H. & G. N. Survey.

NORTH CENTRAL AND WEST TEXAS

Archer County

Texhoma Oil & Refining Co. and Maer's No. 3 Kemp & Kempner, 450 feet south and 150 feet west NE cor. SW Block 63, Kemp's Wichita Valley lands. The Texas Company's No. 14 J. H. Turbeville-C, 150 feet north and 745 feet west of SE cor. of 40-acre "C" lease out of Robert Carson Survey, No. 172; No. 15, 150 feet north and 775 feet west SE cor. of same 40-acre "C" lease; No. 16, 150 feet north and 1,147 feet west SE cor. of same 40-acre "C" lease. Atlantic Oil Producing Co.'s No. 8 S. E. Oldham, 450 feet south and 750 feet west NE cor. of 40-acre lease out of E. Hubble Survey, A-1,128. Marland Oil Co.'s No. 6 W. H. Thomas-B, 450 feet south and east of NW cor. of 20-acre lease out of Nathan Thomas Survey, A-454. Mid-Kansas Oil & Gas Co.'s No. 3 A. J. Lowe, 150 feet north and west SE cor. Lot E, Crawford Subdivision, I. Holman Survey, A-162. Wanderer Oil Co. and Continental Oil Co.'s No. 1 M. B. Ray, midway east and west and 150 feet north of south line of north 40 acres of west 80 acres of east 560 acres of M. B. Ray 741.57-acre tract out of Sections 2½ and 3, Club Ranch Subdivision.

Childress County

C. L. Sloane and others' No. 1 B. P. Smith, at center NW F. P. Knott Survey, No. 49.

Crane County

Magnolia Petroleum Co. and others' No. 3 University Land, 330 feet north and 990 feet west of SE cor. Section 34, Block 30, University Land.

Crockett County

Young & Cromwell's No. 1 University Land, at center of SE Section 23, Block 31, University Land.

Crosby County

El Capitan Oil Co.'s No. 1 O. L. Slaton, 2,230 feet north and 205 feet east of SW cor. Section 5, Block B-9, E. L. & R. R. R. Survey.

Cooke County

Lynch, Stahl & Burris' No. 4 Danglemayer, 6,590 feet south and 4,609 feet west of NE cor. of George Ivy Survey, A-516. McElreath & Suggett's No. 1 J. T. Biffle, 1,470 feet south and 660 feet east of NW cor. of Robert Shannon Survey, A-936, being 150 feet south and 660 feet east of NW cor. of J. T. Biffle 120-acre tract.

Foard County

Humble Oil & Refining Co. and Navarro Oil Co.'s No. 1 L. McAdams, 1,320 feet north and 2,640 feet west SE cor. Section 27, Block L, S. P. R. R. Survey.

Fisher County

Baldridge, Dalliard & Clark's No. 1 Wheeler, 5,712 feet south and 1,524 feet west of NE cor. of George Greath Survey, No. 221. Gibson & Johnson's No. 1 J. W. Wheeler, 9,375 feet south and 4,167 feet east of NW cor. of Robert Spiers Survey, No. 283. Fred Phillips' No. 1 C. M. Webb, 765 feet south and 1,050 feet west of NE cor. of Section 2, Block K, T. & P. Survey.

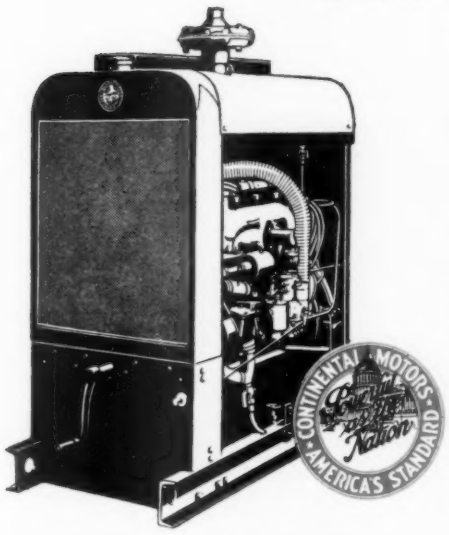
Jack County

Crump & Conklin's No. 1 J. H. Williams, 300 feet south and 290 feet east of NW cor. NE, Section 1, B. S. & F. Survey, A-88. Buttram Petroleum Co.'s No. 4 Joe Preston-C, 700 feet south and 250 feet east of NW cor. of SE, Sam Chairs Survey, A-930; No. 5, 250 feet north and east of SW cor. NE, same survey.

Jones County

Atlantic Oil Producing Co.'s No. 1 E. Howell, 330 feet south and east of NW cor. Section 20, Block 19, T. & P. Survey. Marland Oil Co.'s No. 2 Mason, 990 feet north and 330 feet west of SE cor. of NE Section 18, Block 19, T. & P. Survey. Phillips Petroleum Co.'s No. 2 J. Winter, 933.6 feet north and 330 feet of SW cor. north half of Section 19, Block 19, T. & P. Survey. World Oil Co.'s No. 1 Standiforth, at center of

Power for a ~ thousand uses



Dependable Power For Every Purpose

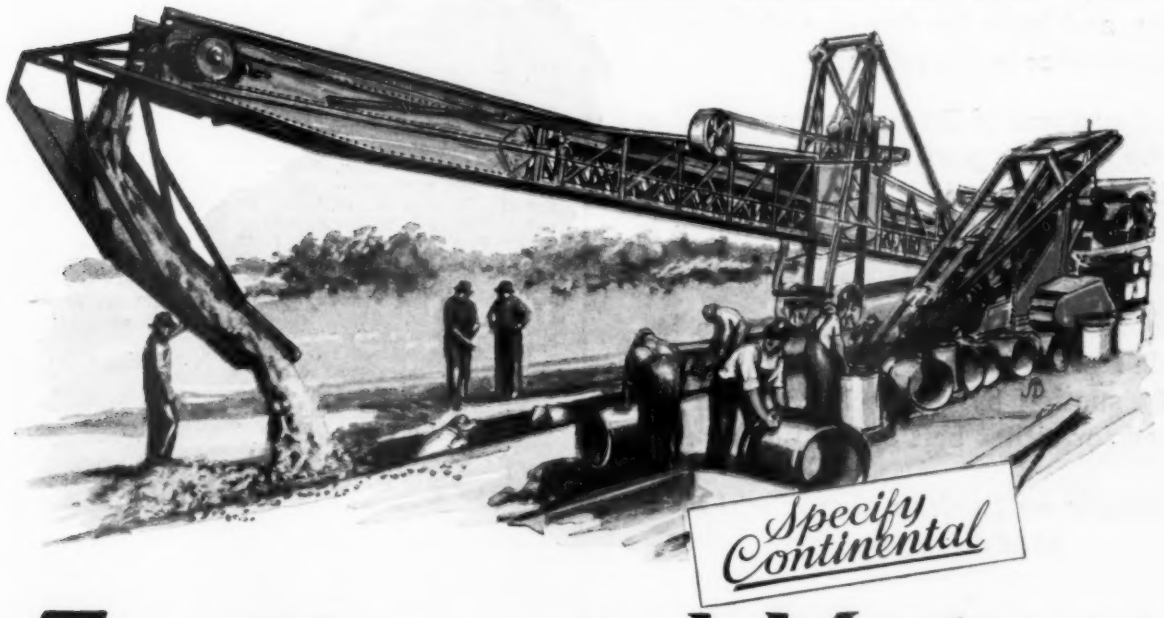
Where industry functions, power has a place.

Wherever gasoline power is used, Continental Motors are outstanding for dependability, economy and proper design.

Road building, lumbering, plant construction, railroading and material handling—these are among the few of their thousands of uses.

26 years of specialized experience is one reason for Continental's present leadership in the industrial power field.

CONTINENTAL MOTORS CORPORATION
Offices: **Detroit, Mich., U. S. A.** ***Factories:*** **Detroit and Muskegon**
The Largest Exclusive Motor Manufacturer in the World

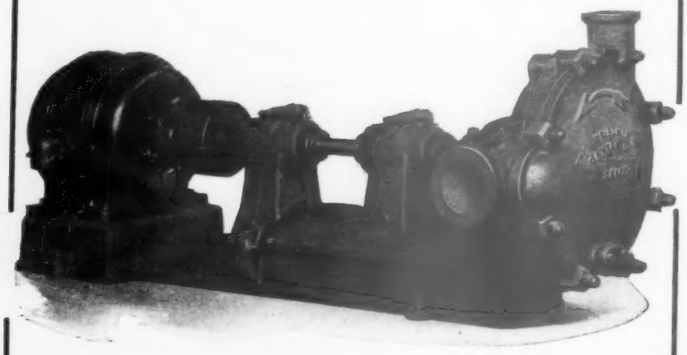


Continental Motors

Refiners

There is a complete line of Duriron centrifugal pumps that are wholly resistant to acids and abrasives that are encountered in sludge and acid clay lines.

Every pump is guaranteed to give perfect satisfaction by the world's largest manufacturer of acid-proof equipment.



They are dependable, sturdy, simple in construction, and built for day-in-and-day-out corrosive service in the refinery.

The hard surfaces of Duriron pumps are not scored by abrasive particles in the solution carried; giving long life, low maintenance and an increasing efficiency as the pump is worn in.

Duriron acid-proof centrifugal pumps are available from 2″ suction by 1½″ discharge to an 8″ suction by 6″ discharge, and are furnished for either belt or motor drive.

Literature on Duriron pumps will be sent on request.

Duriron is produced only by

The DURIRON COMPANY DAYTON·OHIO

SALES REPRESENTATIVES

Edward Soph,
215-16 Alexander Bldg.,
Tulsa, Oklahoma

Ayres Engineering Co.,
908 Post-Dispatch Bldg.,
Houston, Texas

south half of Section 15, Block 19, T. & P. Survey. Zeigler and others' No. 1 J. A. J. Reeves, 660 feet north and west of SE cor. of Section 164, B. B. B. & C. Survey.

Montague County

Barnsdall Oil Co.'s No. 1 N. J. Howard and others, 2,400 feet north and 3,300 feet west of SE cor. J. Chambliss Survey, A-123, being 150 feet north and west of SE cor. of 30-acre lease. Continental Oil Co.'s No. 12 N. J. Howard and others-A, 1,096 feet south and 150 feet east of NW cor. of 120-acre "A" lease J. Chambliss Survey, A-123; No. 6 J. W. Maddox-A, 2,959 feet south and 4,989 feet west of NE cor. C. W. Thompson Survey, A-471, being 1,609 feet south and 111 feet east of NW cor. of lease; No. 5 J. W. Maddox and others-B, 472 feet north and 150 feet west of SE cor. of 105-acre lease "B" of E. Votaw Survey, A-827. Farlan Oil Co.'s No. 5 J. W. Maddox, 2,961 feet south and 5,209.5 feet west of NE cor. of C. W. Thompson Survey, A-741, being 1,611 feet south and 111 feet east of NW cor. of lease. F. H. E. Oil Co.'s No. 7 N. J. Howard and others-B, 750 feet south and 50 feet east of middle to the north line of 20-acre lease "A," J. Chambliss Survey, A-123; No. 6 N. J. Howard and others-A, 750 feet south of middle of north line of their 30-acre "A" lease out of same survey; No. 4 N. J. Howard and others-B, 200 feet north and 150 feet east of SW. cor. of 22-acre "B" lease out of same section; No. 5, 150 feet south and west of NE cor. of 22-acre "B" lease out of same survey. Olean Petroleum Co.'s No. 9 J. W. Maddox, 1,570 feet south and 200 feet west of NE cor. of 50-acre lease out of same survey. Pure Oil Co.'s No. 3 J. W. Maddox-D, 200 feet north and west of SE cor. of 91-acre "D" lease out of same survey; No. 5 J. W. Maddox and others-B, 825 feet north and 150 feet east of SW cor. of 40-acre "B" lease out of E. Votaw Survey, A-827. The Texas Company's No. 3 N. J. Howard and others-B, 150 feet north and 200 feet east of SW cor. 80-acre "B" lease out of J. Chambliss Survey, A-123.

Motley County

Chechoke Oil Co.'s No. 1 J. W. Owens, 330 feet south and east of NW cor. Section 26, Block 4, T. & P. Survey.

Upton County

Dixie Oil Co.'s No. 12 A. S. Burleson, 330 feet south and 2,280 feet west of NE cor. of 160-acre lease T. C. Jones Survey, No. 100, A-746. Marland Oil Co.'s No. 18 Sanger Brothers, 330 feet northwest of middle northeast line of Mary S. Denton Survey, No. 7, A-789, and 330 feet northeast of the southwest line of J. H. King Survey, No. 1, A-1,033 and located in J. H. King Survey. Republic Production Co.'s No. 5 M. L. Baker, 1,764 feet southwest of northeast line and 250 feet southeast of the northwest line of E. C. Grooms Survey, No. 9, A-790.

Wichita County

J. D. Ashcraft's No. 1 G. J. Friberg, 500 feet north and 798.5 feet west of SE cor. north 50 acres, east 75.6 acres, north 159.6 acres of south 200 acres of west 468.25 acres of Lewis Wells Survey, A-323. Barney & Cockburn's No. 1 J. Michna, 150 feet south and 150 feet east of NW cor. north 21 acres of J. Michna 51-acre tract out of F. W. Huseman Survey, A-93; No. 2, 15 feet south and 150 feet east of NW cor. north 21 acres J. Michna same 51-acre tract. Texhoma Oil & Refining Co.'s No. 2 W. H. Chilson-A, 450 feet north of center of road and 150 feet east of west line of their 67.9-acre lease out of Section 3, League 4, Denton County School Land, A-417. Apple & Brandeberry's No. 2 G. B. Ancell, 150 feet south and 1,050 feet east NW cor. Section 10, Block 7, H. & T. C. Survey. Frank Baldwin and others' No. 1 Ward & Todd, 618 feet south and 170 feet east of NW cor. Lot 14, Ward & Todd Subdivision, and located in Section 6, G. C. & S. F. Survey, A-625. J. B. Barnes' No. 1 R. G. Ancell, 150 feet north and east of SW cor. W half of SW, Section 11, Block 7, H. & T. C. Survey. Beasley Drilling Co.'s No. 1 Mrs. N. E. Banta, 3,000 feet south and 2,550 feet east of NW cor. Thomas Cook Survey, A-34. Bridwell & Heydrick's No. 2 Bridwell & Heydrick, 620 feet south and 460 feet east of NW cor. Lot 14, Ward & Todd Subdivision, and located in Section 6, G. C. & S. F. Survey, A-625; No. 12 Ward & Todd, 520 feet south and 150 feet west NE cor. south 40 acres, Lot 13, Ward & Todd Subdivision, and located in same section. Douglas & Lebus' No. 2 L. P. Douglas, 880 feet south and 750 feet east of most westerly NW cor. Section 2, S. A. & M. G. Survey, A-675. Hawkins-Hester and others' No. 2 Mrs. C. T. Marshall, 2,600 feet north and 850 feet east SW cor. C. T. Marshall tract and located in G. West Survey, No. 837, A-321. Hereford Oil Co.'s No. 5 C. A. Allingham-A, 150 feet south and 400 feet east of NW cor., Section 32, Block 5, H. & T. C. Survey. M. T. McClure and others' No. 1 Ward & Todd, 660 feet north and 280 feet east SW cor. Lot 1, Ward & Todd Subdivision, and located in Section 6, G. C. & S. F. Survey, A-36. D. Ross and others' No. 15 T. F. Mitchell, 450 feet north and 150 feet east SW cor. Lot 5, T. F. Mitchell Subdivision, and located in P. Castleman Survey, A-36. Ryan Petroleum Co.'s No. 86 G. L. Nance, 3,320 feet south and 1,950 feet east NW cor. Sam O. Fowler Survey, A-78; No. 87, 3,650 feet south and 1,850 feet east NW cor. same survey; No. 88, 2,430 feet north and 1,820 feet east of SW cor. same survey. White Brothers' No. 5 T. F. Mitchell-B, 180 feet south and 150 feet west SE cor. Lot 4, and located in Lot 7, T. F. Mitchell Subdivision, P. Castleman Survey, A-36.

Wilbarger County

Milham Corp.'s No. 17 W. T. Waggoner-L, 205 feet north and 155 feet west of the most southerly SE cor. of 34.6-acre lease "L" out of Section 42, Block 4, H. & T. C. Survey; No. 19, 205 feet south and 155 feet east of NW cor. of same 34.6-acre lease. Murchison & Fain's No. 2 W. T. Waggoner-E, 150 feet south and west of NE cor. S half of NW Section 51, Block 4, H. & T. C. Survey. Phillips Petroleum Co.'s No. 5 W. T. Waggoner-I, 659.7 feet south and 200 feet east of NW cor. SW Section 43, Block 4, H. & T. C. Survey; No. 6, 210 feet south and 175 feet west of NE cor. SW NE, same section; No. 2 W. T. Waggoner-FF, 200 feet north and 186 feet west of SE cor. Section 42, Block 4, same survey; No. 14 W. T. Waggoner-QQ, 150 feet south and 500 feet east of NW cor. of 80-acre "QQ" lease, Section 47, Block 4, H. & T. C. Survey. Waggoner Refining Co.'s No. 5 W. T. Waggoner-A, 200 feet north and 8,890 feet east of SW cor. Section 47, Block 4, H. & T. C. Survey.

Young County

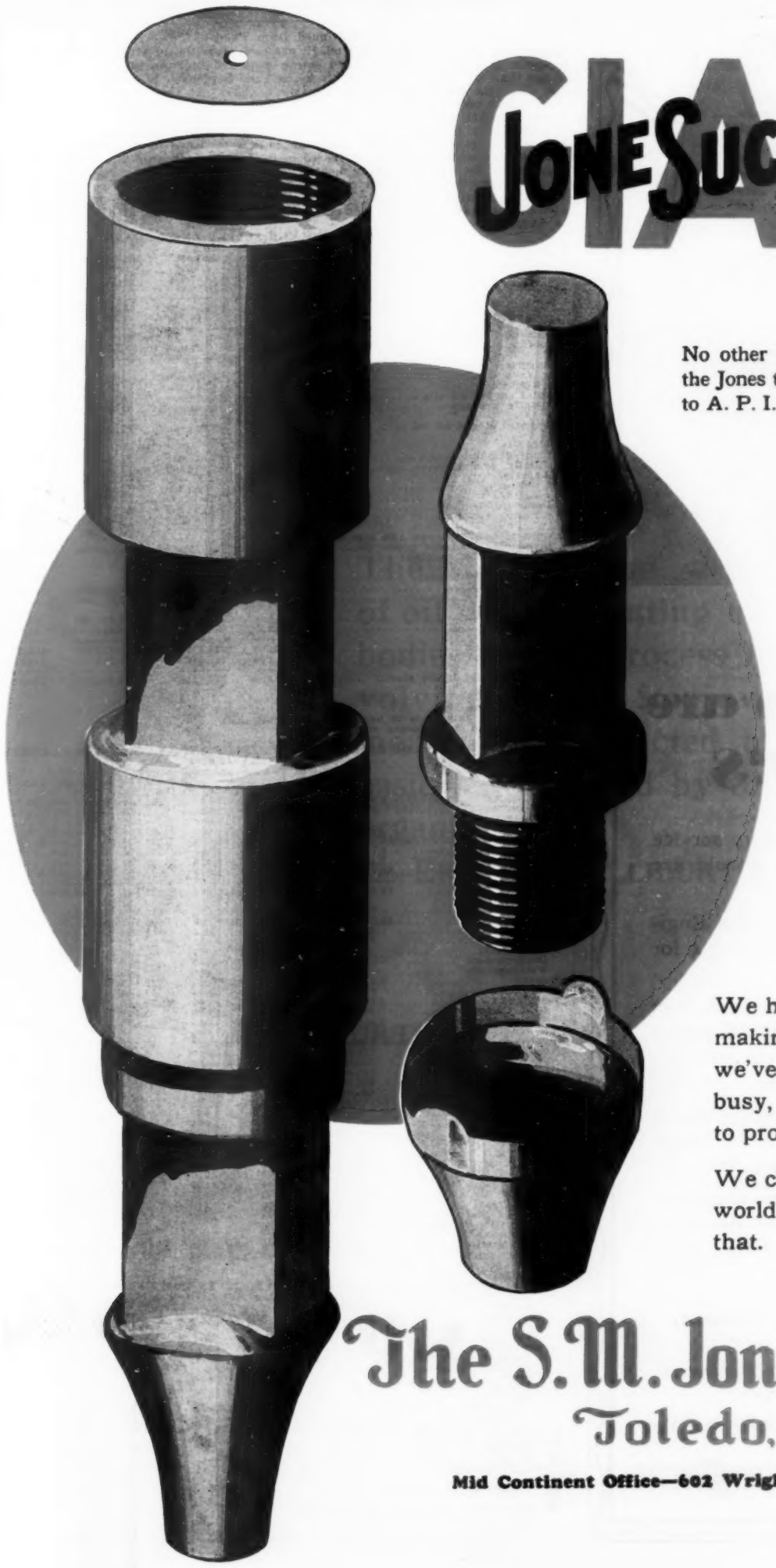
Atlantic Oil Producing Co.'s No. 11 R. H. Rachuig-B, 1,050 feet south and 750 feet west of NE cor. of 50-acre lease "B" out of Section 4, B. B. B. & C. Survey A-1,838.

CHECKING GASOLINE PLANT OPERATION

(Continued from Page 106)

factors to be varied more or less to the end sought in efficiency and grade or character of product. While the greater economy of operation will attend hard firing of the stills with minimum use of steam, a limit will be found by trial at which difficulty arises in control of product endpoint. The capacity of the knockout will be overreached by excessive application of the direct fire. Careful manipulation of the steam delivered to stills will soon establish the most favorable operating temperature for the stills with other satisfactory conditions conforming. A fairly representative range of control observations will be about as follows: Still pressure 12 to 15 pounds gauge; still temperatures 350 degrees to 385 degress Fahrenheit, conditions maintained by moderate firing and introduction of a small amount of steam; knockout temperature 160 degrees to 180 degrees Fahrenheit; stock endpoint 340 degrees to 370 degrees Fahrenheit; tail gas content, 60 gallons, or less, per million cubic feet of residue.

GIANT JONES SUCKER RODS



No other Rod has the milk bottle cap or the Jones thread protector. Threads made to A. P. I. Standards if desired.

No matter what thread is used it is only as good as the machine work.

We have to be extremely careful in making these Giant Rods, because we've got a mighty big plant to keep busy, and a mighty good reputation to protect—

We claim these Giant Rods are the world's finest—and we mean just that.

The S. M. Jones Company
Toledo, Ohio.

Mid Continent Office—602 Wright Building, Tulsa, Oklahoma

DAILY RECORD

July 6th, 3100 feet
7th, 4900 feet
8th, Sunday
9th, 2200 feet
10th, 4400 feet
11th, 4800 feet
12th, 4600 feet
13th, 3800 feet
14th, 8400 feet
15th, Sunday
16th, 6600 feet
17th, Moved camp
18th, 7600 feet
19th, 7600 feet
20th, 7200 feet
21st, not working
22nd, Sunday
23rd, 1800 feet
24th, 4400 feet
25th, not working
26th, 5000 feet
27th, 5600 feet
28th, 5400 feet
29th, Sunday
30th, 6000 feet
31st, 7000 feet

All our Machines are Buckeyes

It requires almost 100% satisfactory service to convince a concern that they should use one brand of equipment exclusively.

Buckeyes only are used by The Hope Engineering & Supply Company in trenching for pipe lines.

The Hope organization, like other leaders in this and similar construction, finds this policy profitable. With Buckeyes, they cut trenches at one-third the cost of hand labor.

The record sheet in the illustration gives an idea of what Buckeyes have done for Hope, and *indicates what they will do for you.*

Write for your copy of "Pipe Line Construction Records." It illustrates and describes Buckeye pipe line equipment and lists other remarkable performances.

The Buckeye Traction Ditcher Company
Findlay, Ohio

Manufacturers of Pipe Line Trench Excavators and Pipe Screwing Machines

There's a Buckeye Sales and Service Office Near You

BUILDERS OF TRENCH EXCAVATORS FOR OVER 30 YEARS

PETROLEUM STATISTICS, SEPTEMBER, 1926

(Continued from Page 62)

domestic demand of gasoline fell off 12 per cent from the previous month. Exports, however, increased materially, and stocks were reduced, although to a much lesser degree than in August. Gasoline stocks on hand September 30, 1926, totaled 33,341,000 bbls., the lowest point since December, 1924. At the current rate of demand these stocks represent 38 days' supply as compared with 36 days' supply on hand the previous month and 48 days' supply on hand September 30, 1925.

The daily average domestic consumption of kerosene registered a 28 per cent gain over August, but did not reach the mark established in September, 1925. The domestic consumption of wax increased materially and stocks of this commodity were reduced for the first time in 10 months.

The refinery data of this report were compiled from schedules of 332 refineries with an aggregate daily crude oil capacity of 2,714,000 bbls. These refineries operated during September at 82 per cent of their capacity as compared with 80 per cent in August.

ANALYSIS OF PETROLEUM SUPPLY AND DEMAND

(Barrels of 42 U. S. gallons.)

	July, 1926	August, 1926*	September, 1926	September, 1925
SUPPLY:				
Domestic crude production:				
Light	53,072,000	54,159,000	53,417,000	51,559,000
Heavy	11,821,000	12,366,000	11,784,000	13,873,000
Total	64,893,000	66,525,000	65,201,000	65,432,000
Daily average	2,093,000	2,146,000	2,173,000	2,181,000
Excess of daily average domestic production over domestic demand	Deficiency See below	Deficiency See below	83,000	128,000
Imports:				
Crude	5,185,000	5,332,000	4,350,000	4,027,000
Refined	1,992,000	2,360,000	1,131,000	877,000
Total supply all oils	72,070,000	74,217,000	70,682,000	70,336,000
Daily average	2,325,000	2,394,000	2,356,000	2,345,000
Change in stocks all oil	†3,810,000	†5,324,000	†2,780,000	456,000
DEMAND:				
Total demand	75,880,000	79,541,000	73,462,000	69,880,000
Daily average	2,448,000	2,566,000	2,449,000	2,329,000
Exports‡:				
Crude	1,726,000	1,083,000	1,388,000	923,000
Refined	8,738,000	10,696,000	9,366,000	7,372,000
Domestic demand	65,416,000	67,762,000	62,708,000	61,585,000
Daily average	2,110,000	2,186,000	2,090,000	2,053,000
Excess of daily average domestic demand over domestic production	17,000	35,000	See above	See below
STOCKS (end of month):				
Crude:				
East of California§:				
Light	221,013,000	220,444,000	220,334,000	301,156,000
Heavy	57,171,000	57,042,000	57,352,000	.....
California:				
Light	33,583,000	32,124,000	30,489,000	43,007,000
Heavy	87,761,000	87,763,000	87,475,000	81,476,000
Total crude x	399,528,000	397,379,000	395,650,000	425,639,000
Total refined	123,521,000	120,346,000	119,295,000	124,696,000
Grand total liquid stocks	523,049,000	517,725,000	514,945,000	550,335,000

*Revised.
†Decreases.
‡Includes shipments to noncontiguous territories.
§Exclusive of producers' stocks.
xIncludes fuel oil.

PRODUCTION OF CRUDE PETROLEUM BY FIELDS AND STATES WITH CLASSIFICATION BY GRAVITY

(Barrels of 42 U. S. gallons.)

Field—	August, 1926 Total	August, 1926 Daily Av.	September, 1926 Total	September, 1926 Daily Av.	Jan.-Sept., 1926	Jan.-Sept., 1925*
Appalachian	2,466,000	79,600	2,458,000	81,900	21,285,000	20,758,000
Lima-Indiana	177,000	5,700	171,000	5,700	1,571,000	1,638,000
Michigan	7,000	200	10,000	300	39,000	.....
Ill.-S. W. Ind.	734,000	23,400	712,000	23,800	6,354,000	6,403,000
Mid-Continent	36,459,000	1,176,100	35,970,000	1,199,000	303,323,000	321,969,000
Gulf Coast	4,773,000	154,000	4,815,000	160,500	29,031,000	24,862,000
Rocky Mountain	3,154,000	101,700	2,960,000	98,700	28,514,000	26,078,000
California	18,766,000	605,300	18,105,000	603,500	165,701,000	173,710,000
Total U. S.	66,525,000	2,146,000	65,201,000	2,173,400	555,818,000	575,427,000
State—						
Arkansas	4,926,000	158,900	4,700,000	156,600	46,140,000	58,331,000
California	18,765,000	605,300	18,105,000	603,500	165,701,000	173,710,000
Colorado	271,000	8,700	241,000	8,100	2,018,000	749,000
Illinois	670,000	21,600	658,000	22,000	5,867,000	5,910,000
Indiana	67,000	2,200	67,000	2,200	594,000	639,000
Southwestern	54,000	1,800	54,000	1,800	487,000	493,000
Northeastern	13,000	400	13,000	400	107,000	146,000
Kansas	3,672,000	118,400	3,483,000	116,100	30,797,000	28,418,000
Kentucky	540,600	17,500	530,500	17,700	4,703,300	5,156,000
Louisiana	2,042,000	65,900	1,952,000	65,100	17,169,000	15,219,000
Gulf Coast	387,000	12,500	344,000	11,500	3,012,000	2,160,000
Rest of State	1,655,000	53,400	1,608,000	53,600	14,157,000	13,059,000
Michigan	7,000	200	10,000	300	39,000	.....
Montana	776,000	25,000	654,000	21,800	6,217,000	2,748,000
New Mexico	139,000	4,500	156,000	5,200	1,162,000	626,000
New York	166,000	5,400	170,000	5,700	1,437,000	1,249,000
Ohio	630,000	20,300	612,000	20,400	5,507,000	5,415,000
Central and Eastern	466,000	15,000	454,000	15,100	4,043,000	3,923,000
Northwestern	164,000	5,300	158,000	5,300	1,464,000	1,492,000
Oklahoma	14,802,000	477,500	14,342,000	478,100	128,879,000	132,846,000
Osage County	2,316,000	74,700	2,169,000	72,300	18,750,000	21,755,000
Rest of State	12,487,000	402,800	12,173,000	405,800	110,129,000	111,091,000
Pennsylvania	784,000	25,300	781,000	26,000	6,629,000	6,069,000
Tennessee	2,400	100	2,500	100	30,700	11,000
Texas	15,790,000	509,400	16,308,000	543,600	109,369,000	112,017,000
Gulf Coast	4,386,000	141,500	4,471,000	149,000	26,019,000	22,702,000
Rest of State	11,404,000	367,900	11,837,000	394,600	83,350,000	89,315,000
West Virginia	507,000	16,300	520,000	17,300	4,442,000	4,350,000
Wyoming	1,968,000	63,500	1,909,000	63,600	19,117,000	21,954,000
Salt Creek	1,400,000	45,200	1,302,000	43,400	13,608,000	16,038,000
Rest of State	568,000	18,300	607,000	20,200	5,509,000	5,916,000
Classification by gravity (approx.):						
Light crude	54,159,000	1,747,100	53,417,000	1,780,600	455,622,000	469,061,000
Heavy crude	12,366,000	398,900	11,784,000	392,800	100,196,000	106,366,000

*Final figures.

STOCKS OF CRUDE PETROLEUM HELD IN THE UNITED STATES

AT REFINERIES (and in coastwise transit thereto). Reported by location of storage:	August 31, 1926*	September 30, 1926	September 30, 1925†
East Coast:			
Domestic	8,576,000	9,145,000	7,643,000
Foreign	2,905,000	2,648,000	2,258,000
Appalachian	1,659,000	1,688,000	1,335,000
Indiana, Illinois, etc.	1,844,000	1,992,000	924,000
Oklahoma, Kansas, etc.	2,869,000	2,312,000	4,422,000
Texas:			
Inland	1,010,000	942,000	1,131,000
Gulf Coast:			
Domestic	7,029,000	7,395,000	5,390,000
Foreign	271,000	306,000	580,000
Arkansas and Inland Louisiana	715,000	676,000	716,000
Louisiana, Gulf Coast:			
Domestic	7,060,000	8,241,000	3,725,000
Foreign	1,111,000	909,000	1,042,000
Rocky Mountain	1,462,000	1,394,000	1,494,000
Total east of California	36,631,000	37,648,000	30,660,000
ELSEWHERE THAN AT REFINERIES:			
Domestic—Reported by field of origin:			
Appalachian:			
New York, Pennsylvania, West Virginia, Eastern and Central Ohio: Gross	7,235,000	7,135,000	7,141,000
Net	6,962,000	6,842,000	6,860,000
Kentucky: Gross	1,994,000	1,990,000	1,938,000

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AT REFINERIES (and in coastwise transit thereto).		August 31,	September	September
Lima-Indiana:	Net	1,481,000	1,271,000	1,827,000
	Gross	931,000	945,000	1,302,000
Illinois-S. W. Indiana:	Net	731,000	733,000	1,100,000
	Gross	11,930,000	11,934,000	11,090,000
Mid-Continent:	Net	11,451,000	11,448,000	10,620,000
Oklahoma; Kansas; Central, North and West Texas:	Gross	147,333,000	148,420,000	171,738,000
	Net	134,972,000	136,113,000	159,315,000
Northern Louisiana and Arkansas:	Gross	39,458,000	37,644,000	43,319,000
	Net	37,129,000	35,008,000	41,145,000
Gulf Coast:	Gross	17,688,000	18,661,000	20,715,000
	Net	17,300,000	18,253,000	20,310,000
Rocky Mountain:	Gross	30,351,000	29,885,000	28,623,000
	Net	30,301,000	29,833,000	28,580,000
Total pipeline and tank farm stocks	Gross	256,509,000	256,014,000	285,865,000
east of California:	Net	246,327,000	239,501,000	269,757,000
Foreign crude petroleum on Atlantic Coast		75,000	66,000	143,000
Foreign crude petroleum on Gulf Coast		453,000	471,000	596,000
Total refinery, pipeline and tank farm stocks of domestic and foreign crude petroleum east of California		277,486,000	277,686,000	301,156,000
Calsification by gravity (approx.):				
East of California:				
Light crude (24 degree sand above)		220,444,000	220,334,000	.....
Heavy crude (below 24 degrees)		57,042,000	57,352,000	.....
CALIFORNIA: Light		32,124,000	30,489,000	43,007,000
Heavy (including fuel)		87,769,000	87,475,000	81,476,000

*Revised. †Final figures.

IMPORTS AND EXPORTS OF CRUDE PETROLEUM (BARRELS)
(From Bureau of Foreign & Domestic Commerce)

	August, 1926		September, 1926		Jan.-Sept.,	Jan.-Sept.,
	Total	Daily Av.	Total	Daily Av.	1926	1925*
Imports	5,332,000	172,000	4,350,000	145,000	46,493,000	48,325,000
From Mexico	3,360,000	108,400	2,265,000	76,000	32,730,000	44,080,000
From Venezuela	1,088,000	35,100	1,102,000	36,000	8,354,000	2,801,000
From Colombia	549,000	17,700	653,000	22,000	1,569,000	.....
From other countries	335,000	10,800	330,000	11,000	3,840,000	1,444,000
Exports	1,083,000	34,900	1,388,000	46,000	11,770,000	10,428,000
Domestic crude oil:						
To Canada	960,000	31,000	1,234,000	41,000	9,813,000	6,624,000
To other countries	123,000	3,900	154,000	5,000	1,956,000	3,609,000
Foreign crude oil	.....	.....	..Not available		1,000	195,000

*Final figures.
Note: No crude shipments to territories during September, 1926.

INDICATED DELIVERIES OF CRUDE PETROLEUM, EXCLUSIVE OF CALIFORNIA GRADES, TO DOMESTIC CONSUMERS (BARRELS)

Domestic petroleum	August, 1926		September, 1926		Jan.-Sept.,	Jan.-Sept.,
by fields of origin:	Total	Daily Av.	Total	Daily Av.	1926	1925*
Appalachian	2,674,000	86,300	2,788,000	92,900	21,665,000	21,353,000
Lima-Indiana	217,000	7,000	169,000	5,600	1,809,000	1,762,000
Michigan	7,000	200	10,000	300	39,000	.....
Ill. & S. W. Ind.	1,004,000	32,400	715,000	23,800	5,488,000	6,661,000
Mid-Continent	38,484,000	1,241,400	36,950,000	1,231,800	328,143,000	332,661,000
Gulf Coast	3,479,000	112,200	3,862,000	128,700	30,041,000	24,718,000
Rocky Mountain	3,348,000	108,000	3,428,000	114,300	27,676,000	26,223,000
Deliveries and exports	49,213,000	1,587,500	47,922,000	1,597,400	414,861,000	413,387,000
Deliveries	48,425,000	1,562,100	47,204,000	1,573,500	407,402,000	405,342,000
Foreign petroleum	5,173,000	166,900	4,341,000	144,700	46,362,000	48,125,000
Deliveries of domestic and foreign petroleum	53,598,000	1,729,000	51,545,000	1,718,200	453,764,000	453,467,000

*Final figures.

NUMBER OF PRODUCING OIL WELLS COMPLETED†

August, 1926	1,924
September, 1926	1,745
January-September, 1926	13,714
January-September, 1925*	12,796

*Final figures.
†For states east of California, from The Oil and Gas Journal; for California, from the American Petroleum Institute.

SHIPMENTS OF CALIFORNIA OIL THROUGH PANAMA CANAL TO EASTERN PORTS IN UNITED STATES
(From Panama Canala Record)

	Aug., 1926	Sept., 1926	Jan.-Sept., 1926	Jan.-Sept., 1925*
Crude oil: Long tons (2,240 lbs.)	146,000	125,000	1,476,000	1,670,000
Barrels (approx.)	1,048,000	861,000	10,615,000	12,027,000
Refined products: Barrels (approx.)	2,143,000	2,397,000	15,157,000	9,763,000
Fuel oil	717,000	908,000	4,246,000	64,000
Gas oil	614,000	385,000	3,794,000	361,000
Gasoline	812,000	917,000	6,328,000	7,633,000
Lubricants	.....	68,000	342,000	391,000
Tops	.....	119,000	447,000	1,314,000

*Final figures.

COMPARATIVE ANALYSES OF MAJOR REFINED PRODUCTS, SEPTEMBER, 1926, AND PRECEDING MONTHS
(Barrels of 42 U. S. gallons.)

	Production	Imports	Exports*	Stocks End of Period	Domestic Demand
Gasoline:					
July	24,927,000	460,000	2,702,000	38,315,000	24,162,000
August	25,416,000	674,000	3,572,000	34,551,000	26,282,000
September	24,834,000	258,000	3,853,000	33,341,000	22,449,000
January-September	213,676,000	4,240,000	33,654,000	33,341,000	189,796,000
Motor fuel:					
July	26,088,000	.....	.....	.....	.....
August	26,474,000	.....	.....	.....	.....
September	26,019,000	.....	.....	.....	.....
January-September	223,070,000	.....	.....	.....	.....
Kerosene:					
July	4,862,000	21,000	1,612,000	8,439,000	2,709,000
August	5,149,000	20,000	2,689,000	8,186,000	2,733,000
September	5,191,000	21,000	1,843,000	8,159,000	3,396,000
January-September	45,714,000	72,000	16,246,000	8,159,000	28,502,000
Lubricants:					
July	2,847,000	1,000	746,000	7,327,000	2,089,000
August	2,836,000	2,000	660,000	7,226,000	2,279,000
September	2,645,000	2,000	705,000	7,149,000	2,019,000
January-September	24,234,000	29,000	6,979,000	7,149,000	17,388,000
Wax (lbs.):					
July	54,267,000	2,089,000	30,768,000	156,704,000	24,138,000
August	54,440,000	968,000	26,906,000	165,065,000	20,141,000
September	49,228,000	252,000	29,303,000	159,779,000	25,463,000
January-September	477,523,000	6,736,000	252,491,000	159,779,000	188,380,000
Gas and fuel oils:					
July	31,351,000	1,485,000	2,427,000	†25,696,000	.....
August	31,056,000	1,629,000	3,582,000	†26,500,000	.....
September	30,620,000	817,000	2,750,000	†27,200,000	.....
January-September	267,439,000	11,698,000	27,488,000	†27,200,000	.....
September, 1925, for comparison:					
Gasoline	21,573,000	182,000	2,242,000	35,572,000	20,177,000
Kerosene	4,710,000	1,000	1,621,000	8,405,000	4,260,000
Lubricants	2,565,000	1,000	547,000	6,760,000	1,987,000
Wax (lbs.)	46,713,000	219,000	29,256,000	108,679,000	26,083,000
Gas and fuel oils	30,579,000	652,000	2,830,000	†29,915,000	.....

*From Bureau of Foreign & Domestic Commerce—subject to revision. Exports, except for wax, include shipments to Alaska, Hawaii and Porto Rico.
†These stocks for east of California only.

RUNS TO STILLS AND OUTPUT OF REFINERIES IN THE UNITED STATES, SEPTEMBER, 1926

Oils run to stills (bbls.):	Crude Oil		Unfinished	Nat.-Gas	Total Oils Run
	Domestic	Foreign	Oils	Gasoline	to Stills
East Coast	8,035,000	2,896,000	1,049,000	158,000	12,138,000
Appalachian	2,457,000	.....	116,000	27,000	2,600,000
Ind., Ill., etc.	5,861,000	.....	423,000	85,000	6,369,000
Okla., Kans., etc.	8,488,000	.....	250,000	267,000	9,005,000

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Oils run to stills (bbls.):	Crude Oil—Domestic	Crude Oil—Foreign	Unfinished Oils	Nat.-Gas Gasoline	Total Oils Run to Stills
Louisiana and Ark.	4,730,000	1,123,000	459,000	78,000	6,390,000
Rocky Mountain	2,506,000	.....	676,000	98,000	3,280,000
California	17,587,000	.....	339,000	320,000	18,236,000
Total U. S.	62,292,000	4,236,000	3,700,000	1,377,000	71,605,000
Daily average, 9/26	2,076,400	141,200	123,300	45,900	2,386,800
Daily average, 8/26	2,050,000	134,100	124,500	48,700	2,365,900
Texas Gulf Coast	9,673,000	217,000	353,000	294,000	10,537,000
Louisiana Gulf Coast	2,974,000	1,123,000	135,000	3,000	4,235,000
Output and losses:	Gasoline (Bbls.)	Kerosene (Bbls.)	Gas and Fuel Oils (Bbls.)	Lubricants (Bbls.)	Wax (Lbs.)
East Coast	3,673,000	1,091,000	4,848,000	761,000	17,713,000
Appalachian	1,018,000	356,000	573,000	405,000	7,608,000
Ind., Ill., etc.	3,429,000	446,000	1,658,000	265,000	6,943,000
Okla., Kans., etc.	4,479,000	726,000	2,794,000	207,000	5,186,000
Texas	5,226,000	1,303,000	5,065,000	686,000	5,175,000
Louisiana and Ark.	1,458,000	537,000	2,956,000	48,000	4,277,000
Rocky Mountain	1,408,000	192,000	679,000	47,000	2,326,000
California	4,143,000	541,000	12,047,000	226,000	.....
Total U. S.	24,834,000	5,191,000	30,620,000	2,645,000	49,228,000
Daily average, 9/26	827,800	173,000	1,020,700	88,200	1,640,900
Daily average, 8/26	4,110,000	1,066,000	3,828,000	658,000	4,948,000
Louisiana Gulf Coast	1,055,000	492,000	1,465,000	47,000	4,277,000
Output and losses (cont.):	Coke (Tons)	Asphalt (Tons)	Other Fin. Prod. (Bbls.)	Unfinished Prod. (Bbls.)	Losses (Bbls.)
East Coast	15,248	162,721	131,000	104,000	543,000
Appalachian	1,670	.....	14,000	26,000	170,000
Ind., Ill., etc.	23,063	16,082	111,000	10,000	212,000
Okla., Kans., etc.	21,044	429	38,000	151,000	446,000
Texas	14,120	26,464	33,000	461,000	667,000
Louisiana and Ark.	11,062	54,635	187,000	673,000	154,000
Rocky Mountain	8,904	6,638	47,000	669,000	133,000
California	.....	41,603	188,000	*591,000	267,000
Total U. S.	95,111	308,572	749,000	2,721,000	2,492,000
Daily average, 9/26	3,170	10,286	25,000	90,700	83,100
Daily average, 8/26	2,874	9,869	23,600	91,900	84,000
Texas Gulf Coast	12,266	26,464	27,000	142,000	472,000
Louisiana Gulf Coast	9,282	52,285	178,000	575,000	79,000

*Includes 138,000 bbls. net tops rerun.

GASOLINE PRODUCTION BY THE VARIOUS METHODS—SEPTEMBER, 1926
(Barrels)

	Straight Runs	Pct.	Cracked	Pct.	Natural-Gas Gasoline	Pct.	Total
East Coast	2,022,000	55	1,493,000	41	158,000	4	3,673,000
Appalachian	717,000	70	274,000	27	27,000	3	1,018,000
Indiana, Ill., etc.	1,709,000	50	1,635,000	47	85,000	3	3,429,000
Oklahoma, Kansas, etc.	2,895,000	65	1,317,000	29	267,000	6	4,479,000
Texas	2,813,000	54	2,079,000	40	334,000	6	5,226,000
Louisiana and Arkansas	862,000	59	518,000	36	78,000	5	1,458,000
Rocky Mountain	732,000	52	578,000	41	98,000	7	1,408,000
California	3,756,000	91	67,000	1	320,000	8	4,143,000
Total U. S.	15,506,000	62	7,961,000	32	1,377,000	6	24,834,000
Total U. S. 8/26	15,776,000	62	8,131,000	32	1,5090,00	6	25,416,000
Gulf Coasts	2,634,000	51	2,234,000	43	297,000	6	5,165,000

STOCKS HELD BY THE REFINING COMPANIES IN THE UNITED STATES, SEPTEMBER 30, 1926

	Gasoline (Bbls.)	Kerosene (Bbls.)	Gas and Fuel Oils (Bbls.)	Lubricants (Bbls.)
East Coast	6,719,000	1,774,000	6,947,000	2,487,000
Appalachian	624,000	268,000	685,000	976,000
Indiana, Illinois, etc.	3,406,000	602,000	1,427,000	614,000
Oklahoma, Kansas, etc.	2,705,000	387,000	5,410,000	404,000
Texas	3,586,000	1,919,000	8,595,000	1,585,000
Louisiana and Arkansas	2,777,000	1,449,000	2,690,000	97,000
Rocky Mountain	3,545,000	251,000	1,446,000	161,000
California	9,979,000	1,518,000	.....	826,000
Total U. S.	33,341,000	8,159,000	27,200,000	7,149,000
Total U. S. 8/26	34,551,000	8,186,000	26,500,000	7,226,000
Texas Gulf Coast	3,192,000	1,568,000	7,376,000	1,553,000
Louisiana and Gulf Coast	2,696,000	1,438,000	1,896,000	96,000
	Wax (Lbs.)	Coke (Tons)	Asphalt (Tons)	Other Fin. Prod. (Bbls.)	Unfinished Oils (Bbls.)
East Coast	70,382,000	19,894	84,360	157,000	6,854,000
Appalachian	18,907,000	426	34	48,000	957,000
Indiana, Illinois, etc.	24,155,000	16,632	18,600	186,000	3,029,000
Oklahoma, Kansas, etc.	6,393,000	36,642	1,376	105,000	2,854,000
Texas	8,718,000	82,116	10,046	5,000	8,938,000
Louisiana and Arkansas	21,513,000	61,581	29,650	32,000	2,981,000
Rocky Mountain	9,584,000	70,254	8,183	29,000	1,511,000
California	122,000	.....	36,263	273,000	*12,316,000
Total U. S.	159,779,000	287,546	188,512	835,000	39,500,000
Total U. S. 8/31/26	165,065,000	277,668	200,175	853,000	39,822,000
Texas Gulf Coast	8,491,000	79,794	10,046	2,000	8,405,000
Louisiana Gulf Coast	21,518,000	58,765	29,250	30,000	2,608,000

*Includes 3,828,000 bbls. tops in storage.

Although the production of raw natural-gas gasoline in the United States for September, 111,619,000 gallons, was exceeded in March, 1926, the daily average of 3,721,000 gallons constituted a record figure due to the shorter month. As usual Texas, Oklahoma and California were responsible for the major portion of the increase, although production in the eastern states increased due to the approach of cold weather. Stocks of raw natural-gas gasoline again declined and amounted to 20,706,000 gallons on September 30, 1926. The greatest reduction in these stocks took place in Oklahoma. Blending at the plants and stocks of blends showed very little change during the month.

	Natural-Gas Gasoline—Production (Net)*	Natural-Gas Gasoline—Stocks End of Month	Blended Motor Fuel—Natural-Gas Gasoline Used in Blends	Blended Motor Fuel—Naphtha or Other Oils Used in Blends	Blended Motor Fuel—Stocks End of Month
Appalachian	5,694,000	2,470,000	245,000	274,000	400,000
Indiana, Illinois, etc.	1,349,000	331,000	61,000	23,000	27,000
Oklahoma, Kansas, etc.	42,012,000	10,162,000	3,012,000	8,078,000	2,009,000
Texas	19,592,000	4,927,000	259,000	998,000	194,000
Louisiana and Arkansas	6,305,000	1,096,000	47,000	200,000	426,000
Rocky Mountain	3,888,000	492,000	104,000	229,000	397,000
Total east of California	78,841,000	19,478,000	3,728,000	9,802,000	3,453,000
California	32,778,000	1,228,000	Not available		.....
Total United States	111,619,000	20,706,000	.....	.....	.....
Daily average	3,721,000	.....	.....	.....	.....

*1 per cent estimated.

The indicated output of motor fuel in the United States from the above and other sources may be expressed by the following table:

(Gallons)	August	September
Total gasoline produced at refineries	1,067,500,000	1,043,000,000
(a) Includes natural-gas gasoline blended at refineries:		
August	63,400,000	
September	67,800,000	
(b) Includes natural-gas gasoline run through refinery pipelines:		
August	11,600,000	
September	11,300,000	
Gasoline production exclusive of (a) and (b)	992,500,000	973,900,000
Natural-gas gasoline produced at plants	111,900,000	111,600,000
Benzol production*	7,500,000	7,300,000
Total motor fuel produced	1,111,900,000	1,092,800,000
Daily average	35,870,000	36,430,000

*Estimated with production of by-product coke as a basis.

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CALIFORNIA FIELDS

(Continued from Page 56)

secured a 30-acre lease adjoining the Willett holdings of the Petroleum Securities in the extreme southern part of the field. No. 1 Orton and No. 1 Willett of the Petroleum Securities look quite favorable although each has several hundred feet to go. The Temescal area in Ventura County has come in for considerable attention and it is possible some additional production will be developed in that area. The Temescal Petroleum has three producers on E. L. Doheny's 10,000-acre ranch and is erecting a rig for No. 4. The Bell View Oil Syndicate has offset the Temescal's No. 4 and this hole was spudded in a few days ago. First-class equipment is being used, including a steel derrick, rotary tools and electrically driven machinery. The Bolsa Chica Oil Co. has 600 acres under lease, part of which adjoins the 320-acre holdings of the Bell View.

Rosecrans

The General Petroleum brought in a nice flowing well in the Rosecrans Field upon completing No. 4 Vaughn at 3,996 feet, the hole being finished with a 4½-inch perforated liner. This new well, started a short time ago as a result of the success of the Big Five Oil Co. in developing production on its Cole lease to the north, is flowing through a ½-inch bean under a pressure of 400 pounds and tanking 430 bbls. of clean 35.2 gravity oil daily. The Barnsdall returned No. 12 O'Dea to production late in the week flowing 1,680 bbls. of clean 38.6 gravity oil daily. This well, which has already produced oil valued at more than $200-000, was finished about a year ago in the upper Maxwell zone but was killed recently and deepened to 4,195 feet. The Barnsdall's O'Dea lease has proved one of the most prolific properties in the Rosecrans Field and under the company's policy of consistent development has shown a much smaller decline than any other lease. The company has two other wells on this property, Nos. 13 and 14, nearing completion and it is possible both will be tanking oil within 15 days. The Union has one incompleted driller, No. 21, on the Howard Park property, but will start work on another hole shortly, as a rig has been erected for No. 32.

There were no new wells finished in either the Inglewood or Dominguez Field and none anticipated during the approaching corresponding period. In the latter district the only activity of interest centers around the conservation work being done by the Union and Shell. These companies have been pumping dry gas down into the producing horizon for several months with the result that the field production has become fairly stabilized, in fact during a short period recently the output registered a 5 per cent increase. The Shell is working on a five-spot system with No. 101 Reyes as the key well. About 2,000,000 feet of dry gas is being forced down this receiver under a pressure of around 400 pounds, and while the four adjacent producers expected to register increases have already responded to some extent, it will probably require several months of continuous gas work before any tangible benefits can be noted. It is known this gas conservation work is yielding returns in increased oil and casinghead production as it is a foregone conclusion that the four producing wells would be yielding far less oil if this five-spot system had not been undertaken. It remains to be seen whether the ultimate result will warrant the expenditure made in drilling the key well and erecting the necessary equipment.

Long Beach

The Pan American finished a dandy well in the older section of the Long Beach Field when No. 2 Chaney was turned loose from 5,389 feet, the hole having been finished with a 6¼-inch oil string, 1,250 feet shop perforated. During the first 24 hours it tanked 1,372 bbls. of fairly clean 27.6 gravity oil and, while this is considered large production at this stage, it was to be expected as there are several flowing wells in close proximity which have been flowing in excess of 1,000 bbls. daily for several years. The San Martinez is making satisfactory progress in its drilling operations along the south edge of Signal Hill and will quite likely list several wells for completion during the next few months. The Julian Petroleum's No. 1 Peacock, offsetting the holdings of the San Martinez, is still held up with mechanical trouble. The only development in the northwest extension was the recompletion of J. E. O'Donnell's No. 56 Cerritos, which was cleaned out and returned to production pumping 220 bbls. daily.

The Chanslor-Canfield Midway Oil Co. finished another producing well on its Del Amo property at Torrance when No. 44 was put on the beam at 3,650 feet, the hole being finished with an 8¼-inch oil string. The initial pumping was 210 bbls. of 19.1 gravity oil daily, but since the well was only finished yesterday morning it may register a little increase after it gets under way. The Chanslor-Canfield interests have three other drillers on this property, Nos. 50, 56, and 91, and since a rig has been erected for No. 64 it is believed this well will be spudded in shortly. The Standard will probably be obliged to cement No. 19 South Whittier Community at Santa Fe Springs for the third time as a test made a few days ago following the second cementing indicated a successful water shutoff had not been effected.

Seal Beach

Unless all signs fail the Seal Beach Field is due to register a substantial increase in production within two weeks as the Marland should finish two new wells during the period. The Marland's discovery, No. 2 Bixby, has been averaging a little less than 1,800 bbls. a day for several weeks and using this as a criterion the company's Nos. 3 and 4 on the same lease should be good for around 2,000 bbls. It will be recalled the discovery well has only about a 5-foot penetration into the oil sand as it blew in prematurely while a casing test was being made. It seems logical that Nos. 3 and 4, which will have a more favorable penetration, should at least equal the initial production of the discovery well. If this materializes the field should be producing around 5,000 bbls. a day along about November 15 or 20.

The Standard spudded in No. 1 San Gabriel early in the week and now has two drilling projects under way, No. 2 not having very much further to go. The Pan American is building rig for No. 1 Collins at Alamitos Heights in the western part of the field and work will be pushed ahead rapidly. This is the most northwesterly location and is about a mile away from the Marland's discovery, No. 2 Bixby. The Associated is stepping right along with No. 1 Bryant, a recent spud, and while the productive limits of the field are still undefined it is believed this well will secure commercial production. It is possible the Associated will start another deep test on the Hellman property but no information is available as where it will be located. The western part should prove productive and would seem the logical location, although the six structure survey holes already drilled may have revealed some valuable information not made public.

Fullerton

The General Petroleum's' No. 2-A Tonner, a new well in the Fullerton district, resulted in a 225-bbl. pumper from 4,130 feet, the oil testing 28.1 degrees and showing a cut of 2 per cent. This completion closes the company's development work at Fullerton, although several new wells should be finished in the Richfield district in the near future. Among these are Nos. 8 and 9 on the Thompson lease, Nos. 4 and 5 on the Hugo property and Nos. 7, 8 and 9 on the Stern holdings. The Shell, California Petroleum and Union should also finish new wells at Fullerton, Richfield and Montebello in the near future, as each company is running several strings of tools on its holdings.

The Continental Oil Co. is experiencing considerable success in developing its Kraemer lease at Richfield and should bring in No. 3, its third producer about the end of the year. The company's No. 2 Kraemer has registered a substantial increase in production and at present is

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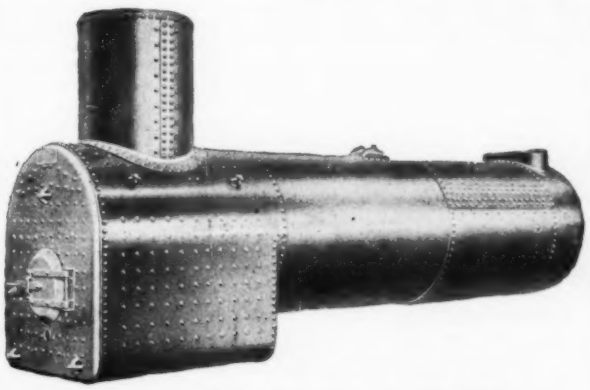

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averaging about 650 bbls. daily. The Birch Oil Co. is anticipating an excellent well when its No. 1-A in the Fullerton district is given a production test within 15 days. The well has had around 1,000 feet of favorable formation. The Standard's No. 1 Benedictine, an edge well and a recent completion, has fallen off miserably and may result in the taking of some corrective measures if there is any change of excluding the water. It is pumping approximately 150 bbls. a day but about 35 per cent water.

Development work in the Rideout Heights section of the Whittier Field has taken on a rather doubtful outlook, although the properties have never been regarded with much favor. The Pan American, Petroleum Securities and California Petroleum are doing most drilling at present, practically all of the major companies having passed up this field because of the complex geological condition. The field is faulted very badly and this lack of uniformity makes drilling rather hazardous.

Midway-Sunset

The Union successfully finished No. 2 Boss and No. 1 Houchin, both out in the Maricopa Flats section of the Midway-Sunset area. The former is making 150 bbls. daily from 5,332 feet while the latter started off doing 95 bbls. from 5,604 feet. The United's No. 2 Transport, in Section 32-12-23, is pumping 200 bbls. daily from 3,632 feet, the hole having been finished with a 6¼-inch oil string. The North American got a small pumper when No. 6, in Section 32-21-24, was given a test. It is making 125 bbls. daily on the beam from 4,175 feet. The Barnsdall will probably complete its No. 1 Vedder in the Mount Poso area within two weeks as this well, in Section 8-27-28, has just been finished at 1,843 feet. Work in this field is going along at a slow pace due to the small initial daily production secured and the low gravity. Shortage of suitable drilling water has been a drawback. Drilling operations up to the present indicate that the Mount Poso Field will be considerably smaller than anticipated and it begins to appear some of those relatively large cash bonuses were not justified.

Southern California Wildcats

Several southern California wildcats entered the doubtful class during the week, among which is the Associated's No. 1 Cypress west of the Inglewood Field. This well looked quite favorable for a time but the company gave up the attempt to develop production and resumed drilling. The bit is going ahead in a coarse gray sand at 4,345 feet. The Union's No. 1 Saugus, in the Newhall-Saugus area, checked early in the week at 4,702 feet, has also taken on a rather doubtful aspect, although it cannot yet be classified as a duster. The Petroleum Securities No. 1 Sesnon, at Reseda and the Standard's No. 1 University, also in the San Fernando Valley, were placed on the doubtful list a few weeks ago. The former, generally considered as the most favorably located, has just passed the 4,700-foot level without finding anything. The latter is 60 feet deeper and going ahead in a hard sand.

There was a rumor early in the week that the Petroleum Securities had found some oil sand in its No. 1 De Baker, a wildcat at Bandini, but the well log does not show anything favorable down to 2,720 feet. The Dominguez Extension Oil Co., drilling a test between the Dominguez and Rosecrans Fields, claims to have definitely located a structure and, while no oil or gas showings have been found to date, officials are rather optimistic. Several cores have been taken above the 2,800-foot level and look rather interesting. The Julian Petroleum's No. 1 Moser, west of the northern part of Rosecrans Field, is rotating ahead in a hard gray sand at 3,730 feet and, while no showings have been found, this is not particularly discouraging as nothing is expected above the 4,000-foot level.

Several abandonments were listed, the rig from one of which will be skidded to a new location nearby. This was Featherstone & Preston's No. 1 Blinn at Norwalk, being abandoned as a duster at 4,185 feet. The second test will be drilled approximately 150 feet north by the Clearwater Petroleum Co. The Marine Oil Corp. is abandoning No. 1 Strong, a wildcat near Bellflower, at 5,842 feet, due to the unfavorable outlook. The Halfhill Packing Co. has abandoned No. 1 Jeffries at Burbank in an extremely hard formation at 980 feet. This test was on the ranch of James J. Jeffries, at one time heavyweight boxing champion. The company drilled a second hole to 1,250 feet, at which depth it was indefinitely suspended about three months ago. Neither of the two wildcats in the El Segundo quadrangle has yet shown anything resembling production, although E. R. Rider's No. 1 El Segundo is being prepared for a production test from around the 2,300-foot level. The outlook is not any too promising, although Rider claims several feet of sand. The Southern California Drilling Co.'s No. 1 Matteson has just passed the 2,100-foot level and hence is not yet deep enough to pick up the sand reported by Rider.

The Smith Petroleum is down 5,285 feet in its No. 1 Johnson at Hawthorne, but it is reported the company is considering abandoning its attempt to open up a field at this point. The Milham Exploration Co. is still held up with mechanical trouble in its Playa del Rey test at 6,094 reet. The Standard's' No. 1 Austin, a cable tool job in the Topango Canyon, is making unusually slow footage and is only down 1,729 feet. The General Petroleum is expected to start drilling at Sunset Beach within 10 days, although spud may be delayed due to difficulty in moving in material.

Northern California Wildcats

A string of 12½-inch is being landed in the Milham Exploration Co.'s Buttonwillow wildcat in section 8-28-23, and drilling will probably be resumed within 10 days. This well staged a short gas blow-out late in October and future drilling will be watched very closely. The Standard ran across a little tar sand in its Camarillo wildcat but this showing was of a minor character and the bit is going ahead at 3,760 feet. The Associated's Huron wildcat, in Section 30-19-17 is held up with a fishing job resulting from the loss of several strands of drill pipe at 2,060 feet.

The Shell's' No. 1 Berlywood at Moorpark in Ventura County, while it has had one or two slight showings, is getting quite deep and unless the pay is picked up very shortly it will probably be listed as an abandonment. The present depth is 6,667 feet. No. 1 Hobson of the Chanslor-Canfield Midway Oil Co. and No. 1 Sexton of the Milham, both in Ventura County, are being delayed because of mechanical trouble and the outlook is unfavorable. No. 1 White of the Pan American in Monterey County is rotating ahead in a hard shell at 2,718 feet and while the Pyramid, also prospecting in Monterey County, has reported gas showings on several occasions, no other oil indications have been noted from the grass roots down to 3,155 feet. In Tulare County the Federal Exploration Co.'s test in section 15-22-24 is drilling ahead in a sandy blue shale at 3,980 feet. No. 1 Murphy of the Shell near Petaluma, although it is some 500 feet deeper than production was originally anticipated, cannot yet be classified as a duster. The San Martinez Oil Co. has finally abandoned its test in Yolo County after drilling over 6,000 feet of hole. The General Petroleum has taken a five-year lease on a water well in section 28-27-27 in the Mount Poso-Kern front area in order to facilitate work. The company will pay $500 a year for water needed in developing its holdings in Sections 3 and 14, 28-27.

ARTESIA, NEW MEXICO

(Continued from Page 52)

Gas Co.'s No. 2, Section 2-18-27, on production; Flynn, Welch & Yates' No. 10, NE SE, Section 29-18-28, drilling below 2,720 feet; Flynn, Welch & Yates' No. 53, Section 32-18-28, drilling below 2,000 feet; Flynn, Welch & Yates' No. 54, SE Section 29-18-28, preparing to shoot upper pays; Hamilton Petroleum Co.'s No. 1 Billings, waiting for cement to set; Navajo Oil Co.'s No. 2, SW Section 28-17-28, fishing for tools; Ohio Oil Co.'s No. 7 Toomie Allen, Section 28-18-28, no report; Phillips & Welch Brothers' No. 1, SE cor. NE Section 18-18-28, on production; Prairie Oil & Gas Co.'s No. 1, SE SE Section 10-17-31, rigging up; Pueblo Oil Co.'s No. 2, SE cor. SE, Section 33-17-28, location made; Sun Oil Co.'s No. 1, Section 21-25-30, oil showing at 3,680 feet, setting 6-inch casing at 3,800 feet; Skelly Oil Co., overhauling engine, preparing to drill in; Eaton & Co.'s No. 1, Brainard permit, NE cor. SW, Section 5-18-27, drilling at 2,135 feet; Bruce Sullivan's No. 1, SW cor. Section 1-18-31, straightreaming at 3,465 feet; Wooley & Jones' No. 1 Beeson, SE cor. Section 33-17-30, shut down; Wooley & Jones' No. 1 McIntyre permit, C SE Section 21-17-30, spudded in; Williams Petroleum Co.'s No. 5, Section 17-18-28, drilling.

Chaves County

Buffalo, Roswell No. 1 Section 25-11-27, drilling below 3,800 feet; Colorado Gas & Fuel Co.'s No. 1, Section 16-8-27, preparing to resume drilling below 5,040 feet; Etz, DeVito No. 1, NW SE Section 24-11-25, casing parted; Hall and others' No. 1, Section 24-11-25, drilling at 1,200 feet; The Texas Company's No. 1 Dunken Dome, Section 29-17-18, drilling below 2,300 feet.

Lea County

Cap Rock Oil & Gas Co.'s No. 1 Leanard & Levers, Section 11-16-32, fishing at 720 feet; Exploration Co.'s No. 1, NE Section 25-19-35, preparing to resume drilling; Henderson, Dexter & Blair's No. 1 Wyatt, Section 34-17-33, drilling below 1,300 feet; Inglefield, Bridges' No. 1, Section 4-17-34, underreaming 10-inch at 1,500 feet; Maljamar Oil & Gas Corp.'s No. 1 State Acreage, SE Section 16-17-32, drilling below 2,750 feet; Mescalero Petroleum Co.'s No. 1 Hughes, NE SW Section 27-19-38, shut down; Grace Mitchell's No. 1, Section 5-17-32, drilling below, 1,850 feet; T. P. McDonald's No. 1, Section 22-18-34, shut down at 200 feet; Ohio Oil Co.'s No. 1 William Mitchell permit, NE cor. SW, Section 18-17-32, fishing at 3,363 feet.

Curry County

Frio Oil Co.'s No. 2 Saunders, Section 11-5n-35e, drilling at 340 feet; Steinberger's No. 1, C NE Section 21-3n-35e, location made.

Quay County

Argo Oil Co.'s No. 1, Section 5-7-31, location; Gibson Oil Co.'s No. 1, NW Section 25-8-32, drilling below 500 feet; Ohio Oil Co.'s No. 1, Section 24-7n-29e, drilling below 600 feet.

CANADIAN FIELDS

(Continued from Page 54)

other operations in the field are directly or indirectly connected with the Imperial Oil or the Royalite or Dalhousie companies, nor have any of these companies acquired any shares in any companies in the valley, nor has Imperial Oil directly or indirectly sold any shares owned by it in either the Royalite or Dalhousie companies, nor have any shares been purchased directly or indirectly by any of these companies during the recent slump.

"Royalite controls 51 per cent of the Dalhousie, not one share of which has been sold, nor will the shares in fact be issued to Royalite until completion of the drilling operations called for by the contract approved by the shareholders when the reorganization of Dalhousie was effected. A fall in market prices of shares is generally attributable to large numbers of shares being thrown upon the open market. It is clear, therefore, that the present depressed price of oil shares on the Calgary exchange is not attributable to the action of the companies I have mentioned.

"I am not in any sense an oil expert, but it must be apparent to any person who visits Turner Valley that the field is of considerable magnitude, for in the Stockman Oils, Ltd., well in the northern part of the valley there are distinct indications of oil and gas. The distance from the Stockman well in the north to the most southerly well in the valley with oil indications is apparently 7 miles. The distance from No. 4 Royalite well, the extreme easterly producing well in the area, to the furthest west well with indications of oil is something over half a mile. It is fairly clear to the casual observer that there must be a pool or pools of oil beneath the surface somewhere within that area, and it is not unreasonable to expect that if operations are carried on persistently, the pool or pools will be tapped.

"I have recently learned that one of the great oil development companies spent as much as $10,000,000 in the East Indies without obtaining a single producing well. Nothing could better indicate the uncertainty of oil exploration, but the operations thus far carried on in the Turner Valley apparently warrant the unskilled observer concluding that within the limited area I have indicated there is a strong probability of producing wells being obtained."

Being Drilled In

Home Oil Co.'s No. 2, LSD 14, Section 20-19-2w5, has finished setting the 12½-inch casing on top of the first producing sand at 1,990 feet and is being drilled in. The sand is in the Dakota formation, and if it does not give commercial production the well will be carried on down to test two lower sands in the same formation. Home No. 1 deep test, LSD 10, Section 20-19-2w5, is at 2,815 feet and drilling steadily in a very hard formation.

In the northern end of the field, Stockmen Oils, Section 27-20-3w5, is at 2,000 feet and drilling for the 12½-inch casing. The shallow gas flow recently encountered around 1,650 feet measured 2,470,000 feet a day, and has been connected with the boilers and camp buildings.

Dolomite Oils, LSD 8, Section 1-20-3w5, has set the 20-inch casing at 250 feet and resumed drilling. Calmont Oils, LSD 2, Section 1-20-3w5, is at 2,210 feet and running casing. Highland Oils, LSD 5, Section 5-20-2w5, is drilling below 2,400 feet. Cooper-Nanton Oil Co., LSD 2, Section 7-20-2w5, is at 4,010 feet with 8½-inch casing run to 4,000 feet and is planning to drill open hole as far as possible. The crew is pulling the 15-inch and 12½-inch casing.

New McDougall-Segur, LSD 14, Section 12-20-3w5, is at 2,512 feet and the 10-inch casing, which was recently pulled to take off a crooked joint, is being rerun. Hole has been cleaned to 2,070 feet and casing run to 2,040 feet. New Valley Oil Co., LSD 4, Section 6-21-2w5, is at 1,520 feet and running 12½-inch casing to overcome difficulties from caving.

British Dominion Oil Co., LSD 4, Section 5-20-2w5, is at 3,000 feet and drilling for the 10-inch casing. Okalta Oils, LSD 1, Section 1-20-3w5, has a cable tool outfit rigged up ready to spud in.

In the Aldersyde district, Ranchmen's Gas & Oil Co., LSD 16, Section 13-20-29w4, is rigged up ready to spud in a test on the Gordon Campbell structure. A standard outfit is being used.

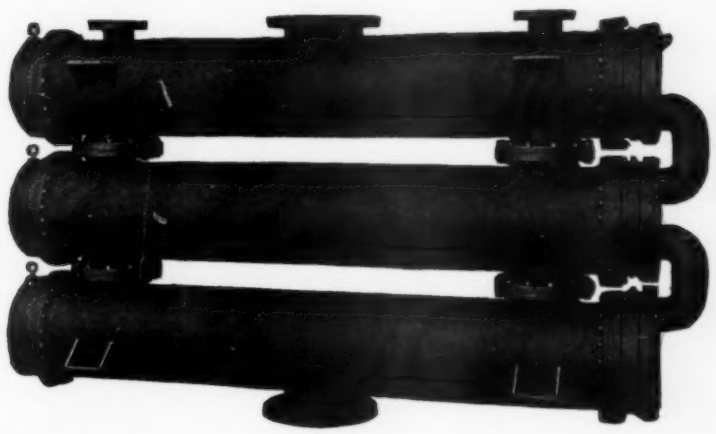
North of Gleichen

A structure north of Gleichen, Alta., has been blanketed by the Oil Producers Corp. of Montana. The structure, about 1½ miles north of Gleichen, is situated in Township 22-23w4, and a tentative location has been made in SW of Section 24-22-23w4, where it is thought possible oil may be reached at 2,700 feet. A drilling outfit will be shipped from Shelby, Mont., for the test.

At Meeting Creek, Alta., a shallow test for water on the Swift Creamery property encountered a large flow of gas. The well has been capped and it is planned to pipe the gas for local consumption.

In the Border fields, Devenish Petroleums, LSD 5, Section 27-5-14w4, is reported at 1,965 feet and drilling. A gas sand is expected around 2,100 feet. At Coutts, Urban Oils, Section 4-1-15w4, is at 3,196 feet and fishing for a lost bit. Alberta Flathead Oil Co. has secured the NE of Section 31-2-15w4 and NE of Section 21-2-15w4 from the Alberta Pacific Consolidated, Lad., of Calgary and will develop the acreage on a one-eighth royalty basis. The acreage is on the Milk River Dome 45 miles south of Lethbridge, and No. 1 test is to spud in May 1 of next year. At Redcliffe, Roth No. 2 deep test, Section 17-13-6w4, is shut down at

A heat exchanger and condenser in one



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With two sections, water can be used as the cooling medium in one unit and oil in another, thus providing a condenser and heat exchanger in one set.

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And note, too, the many operating advantages of this arrangement. Sections can be added or removed to meet varying capacity requirements. The complete unit is readily transported and assembled if necessary to meet changing plant conditions. Inspection and cleaning is greatly facilitated.

Note these other G-R Units for lower refining costs

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A compact, twin exchanger with strict counter-current flow to promote maximum rate of heat interchange.

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for cooling casinghead or natural gas. Can be used as inter-, after-, or pre-cooler in absorption and compression type natural gasoline plants. Has low pressure loss and exceptional efficiency.

G-R Jacket Water Cooler

uses any source of raw water to cool the jacket water from oil and gas engines and compressors. The famous Multiwhirl Cooler—thousands in operation in every liquid cooling service.

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for condensing natural gasoline vapors in casinghead gasoline plants. Can also be used as a knock-out box or fractionating tower control section with particularly close control of the end points.

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O&GJ 11-11-26

1,100 feet waiting for casing. East of Coutts, Imperial Oil, Ltd., Erickson Coulee test, LSD 13, Section 8-1-12w4, has resumed drilling at 2,455 feet.

On the Montana side, the Green Syndicate of Winnipeg, Man., SW of Section 11-17-2w, 6 miles east of Sweetgrass, is reported drilling below 1,000 feet. A. J. McLay of Oil Producers Corp. of Montana has brought in Bottineau-Minot No. 2, SW of Section 33-35-1w, as a 150-bbl. producer.

In the Jumping Pound district, 25 miles west of Calgary, Imperial Oil, Ltd. Bow River No. 1, LSD 15, Section 12-25-5w5, is reported at 4,510 feet and drilling. In the Highwood district, Imperial-Highwood No. 1, LSD 3, Section 36-18-3w5, is drilling at 846 feet.

In the Irma-Wainwright Field, it is announced that Mewasin Oils, Ltd., of Edmonton has taken over the Emerald Oils No. 1, LSD 8, Section 30-46-6w4, and British Petroleums No. 4, Section 30-45-6w4, on a royalty basis. Emerald No. 1 is at 2,400 feet and shut down, after failing to get production, and British Petroleum No. 4 got a considerable heavy oil production at 2,240 feet. It is planned to drill both wells to at least 2,800 feet. Pending the result of these tests Mewasin Oils will do no further work on its location in LSD 7, Section 30-45-6w4. F. W. Pace of Winnipeg, Man., is president and Relph H. Douglas of Edmonton, Alta., managing director of Mewasin Oils, which is backed largely by Winnipeg capital.

Wainwright-Dome Oils, LSD 7, Section 31-45-6w4, is at 1,300 feet and drilling. The Wainwright Gas Co. line from the Maple Leaf No. 1 gasser in Section 19-45-8w4, to the town of Wainwright is practically complete, and gas will be delivered to Wainwright consumers this month.

Wainwright Pipeline

Plateau Oil Co. has been incorporated under Dominion charter with office at Edmonton, Alta., and 300,000 no par shares to build a pipeline at an estimated cost of $100,000 to connect producing wells in the Wainwright Field with refining plants at Wainwright. The company's plans call for 6 miles of 6-inch welded joint line, equipped with the latest Diesel type of fuel oil engines, duplex horizontal line pumps of 6,000-bbl. daily capacity, line heaters, steam-heated storage tanks, and boiler capacity sufficient to handle the heavy Wainwright crude throughout the year. The company is also planning to develop acreage in the Wainwright Field. Directors of the company are W. A. Douglas, Frederick L. Knapp, Nick Nicholson, Cosmo Picariello and Nicholas Carline. The company is primarily planned to deliver oil to the Kling-Del Refineries, Ltd., which is constructing at Wainwright a refinery and cracking plant of 1,000 bbls. capacity, especially designed to handle Wainwright crudes. George Bonge of Amarillo, Tex., will have charge of refinery construction.

In northern Alberta, Black Rock Petroleums, Ltd., drilling near Fort Vermilion on the upper Peace River, has shut down for the winter at 1,200 feet depth.

In Saskatchewan, Simpson Oil Co., Section 9-29-25w2, has resumed drilling around 300 feet after resetting some casing. The test has encountered some small gas flows.

It is reported that the city of Edmonton is taking steps to secure from the Dominion Government a 40-acre reservation in the McMurray tar sand area for use as paving material. A new paving process worked out by S. C. Ells of the Geological Survey of Canada is being utilized in laying tar sand roads at Jasper Park. It is reported also that English interests represented by Edward Baillie of Moose Jaw, Sask., are planning to develop tar sand acreage by means of an extraction process.

In the Ontario fields, Union Natural Gas Co. No. 13, Dawn Township, Lambton County, which was located some weeks ago, is at a standstill owing to bad roads. In the Tilbury Field, Kent County, Union Natural Gas Co. has finished No. 260 on the lake front, with a fair gas production, around 250,000 feet a day, in the Tilbury sand. The rig is being moved east for No. 261. The Southern Ontario Gas Co. has finished a couple of fair gassers in the Tilbury Field, and is drilling two additional tests, one in the west end of the field. The completed tests were fair average producers.

LA.-ARK. WILDCATS

(Continued from Page 50)

Wingfield and associates' No. 1 Morrison, Section 3-19-13, is drilling sandy lime at 940 feet.

Bradley County

Arkansas Fuel Oil Co.'s No. 1 Arkansas Timber Co., Section 25-16-12, is drilling at 1,183 feet. Magnolia Petroleum Co.'s No. 1 Arkansas Timber Co., Section 33-15-11, is being cored at 3,290 feet. Phillips Petroleum Co.'s No. 1 Southern Lumber Co, Section 36-16-11, is drilling at 3,005 feet.

Grant County

Jones & Watkins' No. 1 Meek, Section 5-4-11, is a rig.

Hempstead County

Zing and associates moved the rig from No. 1 Sutton, Section 9-11-23, and abandoned the test at 940 feet.

Jefferson County

Decem Oil Co.'s No. 1 Hinsley, Section 7-3-10, was drilled to 2,595 feet and is shut down.

Little River County

Grote and associates' No. 1 Allen, Section 2-13-31, tested salt water at 2,941 feet and is being plugged back to 2,000 feet.

Lafayette County

Arkansas Fuel Oil Co.'s No. 5 Allen, Section 18-19-24, east of Bradley, was put on the pump and is making 20 bbls. daily from 2,780-82 feet.

Bienville Parish

Woodley & Collins' No. 1 Thomas, Section 23-16-10, tested salt water at 2,622 feet and was abandoned.

Bossier Parish

Tubbs and associates' No. 1 Jacobs, Section 26-20-13, is drilling at 50 feet. Woodley & Collins' No. 1 Roberson, Section 22-23-12, is drilling chalk rock at 2,444 feet. Hincey & Mack's No 1 Shaw, Section 22-14-4e, is drilling at 600 feet. Southern Crude Oil Purchasing Co.'s No. 5 Caldwell Lumber Co., Section 23-13-5e, is shut down at 1,160 feet.

Catahoula Parish

S. D. Hunter's No. 1 Tensas Delta, Section 36-10-7e, is drilling shale at 977 feet.

Claiborne Parish

Gilliland Oil Co. and Ramsey's No. 1-D Taylor, Section 14-23-8, is below the 5,000-foot level and drilling lime at 5,080 feet. Triangle Drilling Co.'s No. 1 Caskey, Section 7-19-5, is a rig.

DeSoto Parish

Snapp and associates' No. 1 Flores, Section 27-11-11, was dry and abandoned at 3,112 feet. Clark & Melat's No. 1 Willingsley, Section 12-11-16, is drilling at 968 feet. Four and one-half inch casing was set at 4,863 feet and Dixie Oil Co 's No. 1 Jenkins, Section 9-12-11, is drilling at 4,865 feet. Helm & Jarman's No. 1 Joyner, Section 28-11-12, is drilling at 1,790 feet. Snapp and associates' No. 1 Lanier Oil & Gas Co., 330 feet north and west, center Section 7-11-11, is a rig. Operations at The Texas Company's No. 11-A Wemple, Section 2-12-12, are being delayed until cable tools lost at 2,390 feet are fished out.

East Carroll Parish

T. A. Snell's No. 1 Nicholson, Section 25-20-12, is drilling at 1,500 feet.

Franklin Parish

Arkansas Fuel Oil Co.'s No. 1 Blue, Section 9-12-6e, is shut down at 978 feet because of high water. Roxana Petroleum Corp.'s No. 1, Section 18-14-7e, is a rig. R. W. Williams and associates' No. 1 Lemon, Section 17-14-8e, is shut down at 1,785 feet.

Grant Parish

Ayers and associates' No. 1 Blackshear, Section 6-9-1e, is a derrick. E. H. Billeaud's No. 1 Ball, Section 19-7-1e, is shut down at 1,720 feet for fuel. W. R. Keever's No. 1 Barrett, 592 feet west and 150 feet south NE cor. NE SW, Section 19-9-1e, is a rig. J. J. Long and associates' No. 1 Calhoun, Section 4-7-4w, is being reamed to the bottom at 1,285 feet. Tunica Petroleum Co.'s No. 8 L. & A., Section 11-8-2w, is drilling at 500 feet, and No. 9 in Section 3-8-2w is a rig.

Jackson Parish

Grigsby and associates' No. 1 Adams, Section 22-17-4w, is showing a little gas and is drilling lime at 2,415 feet. Louisiana Petroleum Co.'s No. 2 Davis Theuss Section 12-16-3w, is drilling gumbo at 1,830 feet.

LaSalle Parish

Tunica Petroleum Co.'s No. 14-A L. & A., Section 29-7-3e, was dry and abandoned at 1,852 feet. Tunica company's No. 15-A L. & A., Section 7-8-2e, is drilling at 1,650 feet.

Lincoln Parish

Arkansas Fuel Oil Co.'s No. 1 Nobles, Section 18-19-3w, is drilling at 1,500 feet. Buckley & Palmer's No. 1 Davis, Section 12-20-3w, is drilling lime at 2,740 feet.

Natchitoches Parish

Two more failures were chalked up against Natchitoches Parish during the week E. Self's No. 1 Fisher, Section 18-8-9w, was dry and abandoned at 2,826 feet. Edwin J. Forrest's No. 2 Ayers, Section 3-13-7, was abandoned at 1,940 feet and the rig moved. McCormick and associates' No. 1 Russell, Section 41-10-7, is drilling lime at 1,602 feet. Ohio Oil Co.'s No. 2 L. L. L. L. Co., Section 20-8-8w, is drilling gummy chalk rock at 2,130 feet. Ohio company's No. 1 L. & A., Section 23-13-6w, is drilling at 175 feet. Oil Operators Trust's No. 1 Clark, Section 9-10-8, is drilling sand at 2,744 feet. The Texas Company's No. 1 Moss, Section 31-7-8, is drilling lime rock at 2,052 feet.

Rapides Parish

Libuse Oil & Gas Co.'s No. 1 Voda, Section 12-4-1e, is drilling lime at 2,257 feet. Seip and associates' No. 1 Ball, Section 41-4n-2w, is shut down at 2,799 feet waiting for orders.

Red River Parish

S. M. Cagle's No. 1 Long Bell Lumber Co., Section 6-13-9, is drilling at 50 feet. Ten-inch casing was set at 194 feet at Magnolia Petroleum Co.'s No. 36 Polly, Section 7-12-10. The Texas Company's No. 1 Henry Marston, Section 16-14-11, is drilling rock at 160 feet.

Richland Parish

Roxana Petroleum Corp.'s No. 1 Humble Brothers, Section 10-14-6, was dry and abandoned at 1,559 feet. A rig is being moved in for Aarnes and associates' No 1 Hawley, Section 3-18-9e. Gulf Refining Co.'s blew out at 2,340 feet making 5,000,000 feet of gas and 10,000 bbls. of fresh water. The well is to be killed and pipe set. Gulf company's No. 1 Chess-Wyman, Section 23-18-8e, is fishing for 59 joints of the drill stem at 3,176 feet.

Sabine Parish

Godchaux and associates' No. 1 Nona Mills, Section 12-4-13, is shut down at 1,960 feet. Lewis and Clark Petroleum Co.'s No. 1 Wyatt Lumber Co., Section 23-5-12, is drilling at 1,120 feet. Magnolia Petroleum Co.'s No. 1 L. L. L. L. Co., Section 11-6-11, is drilling sandy shale at 1,990 feet.

Winn Parish

Humble Oil & Refining Co 's No. 15-A L. & A., Section 26-10-2e, was dry and abandoned at 1,507 feet, and a rig is up for No. 16-A L. & A., SE SE Section 29-10-2w. A derrick is up for Greer & Gault's No. 1 Bodcau, SW SW, Section 9-11-4w. Ten-inch casing was set at 105 feet and Hyde & Nelson's No. 1 Louisiana Central, Section 16-13-1w, is drilling ahead. Eight-inch casing was cemented at 684 feet at J. C. Long's No. 1 Milam, Section 28-13-3w. Ohio Oil Co.'s No. 2 Edenborn, Section 4-12-1w, is drilling broken lime shale at 2,791 feet.

GULF COAST FIELDS

(Continued from Page 46)

in the Vinton Pool, a workover, is pumping 40 bbls. at 2,280 feet and its No. 2-C Gray got salt water at 4,450 feet. The Gulf Refining Co. has a 50-bbl. well in No. 2 Gray at 3,400 feet.

In the Lockport Pool, the Vacuum-Gulf companies' No. 2 Freidberg & Wolf is rated at 800 bbls. initial output at 3,125 feet. Same interests' No. 1-A Farquhar is making gas and spraying oil, with chokers on. The gas output is estimated as high as 75,000,000 feet, 500 pounds pressure. This well staged a blowout September 25, blowing 125,000,000 feet per day. It bridged and was worked over.

The Vacuum-Gulf will deepen Nos. 6, 8 and 11 Miller and locations have been made for Nos. 12 and 13 Miller. A location has been made for No. 4 Bordages. No. 4 Farquhar is drilling around 3,065 feet. No. 2 Bayou D'Inde is drilling at 3,325 feet. No. 2 Bordages will be drilled deeper.

Drilling in the Pools

The light gravity section on the southwest side at Sour Lake and the northwest side at Pierce Junction are the most active spots in the Gulf region, aside from Spindletop. The Hull Pool is fairly active on the east and southeast sides of the dome where the Republic Production-Houston Oil Co. are jointly drilling on the Dolbear 800 acres and the Gulf Production on the Phoenix to the southeast.

The once famous and prolific Goose Creek Pool no longer attracts attention, the most significant test drilling there being the M. & B. Oil Co.'s No. 5 Scorrgea, northwest of production, in which casing is being set at 2,350 feet. The Humble Oil & Refining Co. has five rigs running, two on the Smith lease on the east side and three on Galliard Peninsula. The Gulf company has only two rigs running and a location made. The Gulf Coast Oil Co. and Keen & Woolf are each working over an old well.

Orange is another district where work has declined to almost zero. The Humble Oil & Refining Co. is drilling No. 10 Winifree and No. 25-A Chesson, and the Gulf Production Co. is drilling No. 3 Granger around 2,355 feet. The Rycade Petroleum Corp. is sidetracking No. 2-C Cow Bayou at 4,650 feet. The Texhoma Oil Co. is deepening No. 16 Chesson, and the Rex Petroleum Co.'s No. 2 Carbello is deepening around 3,510 feet.

West of the Trinity River at South Liberty, the Humble Oil & Refining Co.'s Nos. 3 and 4 Wheeler, recent completions are holding at 400 and 1,400 bbls. respectively. A location has been made for No. 5 Welder. The Gulf company has a location for No. 1 Marshall. The Associated Oil Co.'s No. 1 Tadlock is drilling around 1,800 feet. In the old pool, The Texas Company's Nos. 5 and 6 Staiti are rigging. The Vacuum Oil Co.'s No. 9 Barrett is idle at 3,000 feet.

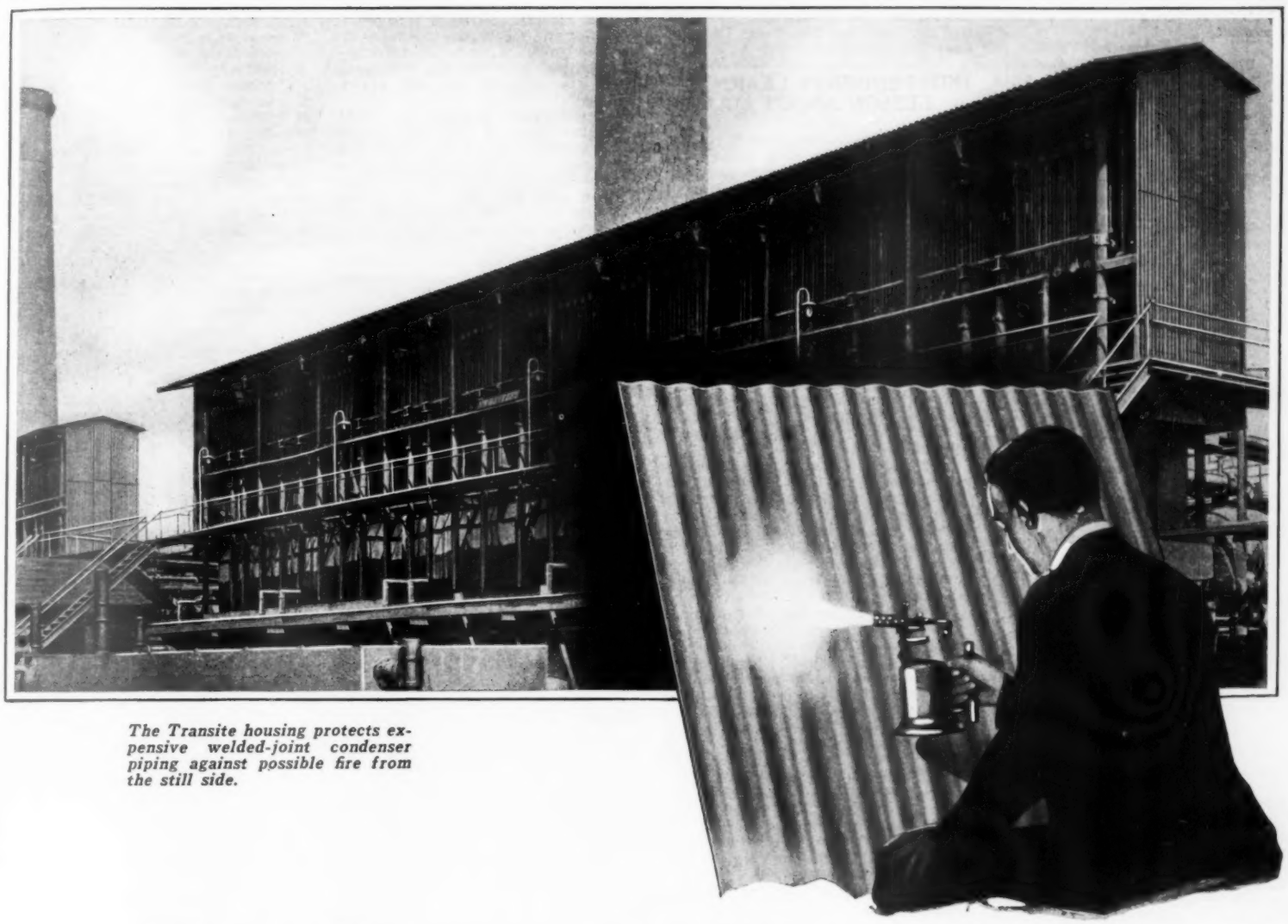
At Blue Ridge, the Humphreys Corp.'s No. 1 West-Schenck is around 3,300 feet. J. S. Abercrombie's No. 3 West-Schenck is a location. The Gulf Production Co.'s No. 7 West-Schenck is at 2,745 feet. No. 9 Luscher is at 3,875 feet. No. 8-B Blakely is below 2,186 feet. The Navarro Oil Co.'s No. 1 Robinson is drilling around 3,080 feet. The Texhoma Oil Co.'s No. 2 Booth is at 3,224 feet.

The Cotton Oil Co.'s No. 1 Deutser, in the Saratoga Pool, is setting casing at 760 feet.

In the Batson Pool, the Sterling Oil Co.'s No. 5 Hooks is drilling around 1,400 feet. The Acorn Oil Co.'s No. 62 Paraffine is a location. The Paraffine Oil Co.'s No. 68 Paraffine is at 1,235 feet, and No. 33 Heywood is idle. The Gulf company's No. 1 Cruse, on the southwest side is drilling below 3,165 feet.

Sour Lake Drilling

At Sour Lake, the Sun Oil Co.'s No. 1 Carpenter is a location. The Humphreys Corp.'s No. 5 Bashara "B", set casing at 2,900 feet; No. 1 Bashara "G", is drilling at 3,350 feet; No. 1 Geisecke, drilling at 3,725 feet; No. 1 Gordon set casing at 3,700 feet. The Orange Petroleum Co.'s No. 2 Merchant set casing at 4,050 feet. Eunice Oil Co.'s No. 3 Eunice rebuilding derrick at 3,950 feet. The Lake View Oil Co.'s No. 52 Hardin County, location. The Texas Company's No. 304 fee, drilling at 3,190 feet. The Hull Oil Co.'s No. 1 Hautier drilling at 3,075 feet. The Lake Graham Oil Co.'s No. 19 Bashara, location. The Gulf Production Co.'s No. 1 Marrs McLean will pump at 3,900 feet; No. 2 drilling at 2,650 feet; No. 4 C. L. Jackson, drilling at 3,875 feet; No. 1 H. A. Thompson



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and others drilling at 2,825 feet; No. 1 M. J. Ebberts rigging up; Nos. 2 and 3 are locations.

Pierce Junction

At Pierce Junction, J. E. Bashara's No. 3 Bender is drilling around 3,317 feet; No. 2 is at 1,985 feet. The Navarro Oil Co.'s No. 2 Humble, a location. The Rio Bravo Oil Co.'s No. 5 fee, drilling at 3,750 feet; No. 6, a location; No. 1 Bender, drilling at 3,400 feet. The Marland Oil Co.'s Nos. 2, 3 and 4 Prudential Investment Co. are locations. The Humphreys Corp.'s No. 1 Leggett, set casing at 3,560 feet; No. 2, a location. Eunice-Carpenter's No. 1 Bullock-Nash, bailing at 3,625 feet; No. 2, a location. Mike Kouri's No. 1 Jones, a location. The Gulf Production Co.'s No. 19 E. R. Taylor, drilling at 4,150 feet; No. 1 W. H. Jones fee "A", will pump at 3,700 feet; Nos. 2 and 3, are locations; No. 1 W. H. Jones fee, drilling at 3,750 feet; Nos. 2 and 3, locations.

In the Hull district, the Republic Production Co.'s No. 41 Dolbear is drilling at 2,375 feet; No. 140, set casing at 2,375 feet; No. 141, drilling at 2,025 feet; No. 142, drilling at 1,775 feet. The Humble Oil & Refining Co.'s No. 2 Lynd, and No. 5 Merchant are locations; No. 4 Hooks-Spell, drilling at 2,875 feet. The Houston Production Co.'s No. 8 Taylor, will deepen. The Texas Company's No. 6 Hannah-Vacuum, drilling at 3,350 feet; No. 4 Merchant, drilling at 3,100 feet. The Empire Gas & Fuel Co.'s No. 22 Barngrover, drilling at 3,275 feet. The Gulf Production Co.'s No. 75 Phoenix, drilling at 1,425 feet; No. 76, drilling at 2,800 feet; No. 77, drilling at 1,650 feet; No. 78, a location; No. 18 David Hannah fee, drilling at 4,775 feet; No. 19, drilling at 3,600 feet.

COASTAL WILDCATS

Austin County

The Vacuum Oil Co. is rigging No. 1 Austin in Austin County.

Orange County

Brownie Babbittee Oil Co.'s No. 1 Lake Shore, 6 miles south of the Orange Pool, rigging. Weber Oil Co.'s No. 1, still shut down.

Wharton County

J. W. Rich and Humphrey Corp. are preparing to abandon No. 1 Malone, 5 miles west of Wharton after taking a core at 2,008 feet. The Texas Company is rigging No. 11-A Taylor in the Boling Pool.

Brazoria County

Clemens Dome, Roxana Petroleum Corp.'s No. 1-A Pabst, drilling around 1,640 feet in cap rock. No. 3 Clemens, drilling below 2,965 feet. No. 3, at Allen Dome, drilling around 2,040 feet. No. 3 Allen, at 3,325 feet. At Rattlesnake Mound, The Texas Company's No. 2 Mayes, rigging.

Chambers County

The Osage Oil Co.'s No. 1 Lake Charlotte, drilling below 3,835 feet. Sun Oil Co.'s No. 1 Moss Bluff, drilling around 2,100 feet.

Jefferson County

Gulf Production Co.'s No. 9 Thomas, Fannette Dome, drilling at 3,980 feet. T. D. Brooks' No. 1 Young, 5 miles south of Spindletop, drilling at 2,600 feet. The Port Arthur Development Co.'s No. 4 West, near Westburg, idle at 1,845 feet.

Harris County

Brain and others' No. 1, near Spring, shut down. Redondo Oil Co.'s No. 1 Lenze, a derrick. Kater and others' No. 1 Crews, west of Humble, drilling at 2,300 feet.

Hardin County

Van Petty's No. 1, near Olive, drilling around 1,400 feet.

Barber Hill

The Humphrey-Bennett test, on the east side of the dome at Barber Hill, is attracting attention, both on account of the depth—4,083 feet—and its location, nearly 1 mile across from the production on the southwest side. No. 2-B was abandoned recently in salt at 1,790 feet. Barclay and Meadows' No. 3 Barber, on the north side, is drilling and the Humble Oil & Refining Co.'s No. 1 Myers is below 2,450 feet. Patillo Higgins' No. 1 fee is idle at 950 feet. Dunbar and Bohlman have a rig in for No. 1 Collier. The Gulf Production Co. has taken up acreage 600 feet northeast from No. 2-B, the Sinclair Oil & Gas Co., some 800 feet southeast and The Texas Company some 1,500 feet south.

INDEPENDENTS LEARN LESSON ABOUT MAJORS

(Continued from Page 52)

tle plans to win the pitch tourney and prevent a complete annihilation of their forces. About that time Joe C. McCue of The Texas Company arrived in Shreveport and paired up with Mr. McGrew for the pitch tourney. Both knew just about all there is to know about old fashioned Louisiana pitch because both had watched the best of them play in the early days.

Mr. Wilson, flushed with victory and that feeling that comes with the success of strategy, relied upon strategy to carry the independents to victory in the pitch tourney.

Mr. McGrew is reported to be a pitch player with a steady style and who plays behind a mask that can't be pulled off, and Mr. McCue has a reputation of never "blowing up" in a pinch.

As the game progressed and the independents began to feel keenly the sting of aces and kings, the independents started calling on the goddesses of luck, walking around chairs and performing other antics calculated to bring about a change of luck. Failing in that direction, Mr. Wilson set the stage for his last bit of strategy.

When the majors got away with a risky lead, he flashed his right hand to his hip pocket. In the Texas country in these days of prohibition, such a gesture can mean two forms of fiery action instead of the one it formerly signified—either the appearance of a flask or the menacing muzzle of a six-gun. His gesture, however, was for neither. He merely brought out the trusty Mail Pouch. While it startled the spectators, it failed to bring a wrinkle from the majors. And by the time the last hands were being played, the independents were so confused they are reported to have attempted to lead the joker on the first round of playing a new hand.

When Mr. Wilson and Mr. Cochran, alias Dugan, left on a midnight train for Wichita Falls, Mr. McGrew and Mr. Rife were bidding them farewell, when Mr. Wilson was heard to remark:

"Never throughout the golf game did I at any time feel unsteady, but was just as confident of the outcome and just as happy as if I had been sitting on top of a million dollars."

SPINDLETOP DRILLING INTERRUPTED BY FIRE

(Continued from Page 46)

to keep back the water. The gas pressure is weakening in the center of the deep sand area, which is something looked for.

Whether the deep sand section will ever reach the peak of 1902 is problematical. Ninety per cent of the development work to date is on the west-southwest side of the old dome, where the work has been congested due to the small bits of acreage each held by a different company. This necessitated many offsets. The first deep sand well was discovered late last year on the southwest side by the Yount Lee Oil Co., which has all the available acreage under lease. Thus the drilling on that side will be conservative and the possibilities cannot be accurately gauged.

Completions during the week were as follows: Gulf Production Co.'s No. 1 Mann, deepened, flowing 1,200 bbls. at 3,300 feet. No. 6 Roche will make a pumper at 3,150 feet. No. 5 Weed is bailing at 3,450 feet. The Rio Bravo Oil Co.'s No. 50 T. & N. O. came in flowing 4,000 bbls. at 3,500 feet. The Yount Lee Oil Co.'s No. 4 Davis is a 500-bbl. well. The Atlantic Oil Producing Co.'s No. 11 McLean shows salt water at 4,400 feet. The Hydland Oil Co.'s No. 1 McFaddin will pump at 3,400 feet. W. B. Flynn abandoned No. 1 Gladys at 1,850 feet. The Magnolia Petroleum Co. junked and abandoned No. 1 fee on the south end of the deep sand section at 4,095 feet. A location has been made for No. 2 fee. Rush & Pittman quit No. 1 Hammon at 4,575 feet and the Walker Syndicate did the same in No. 1 Quinn at 4,550 feet. The Longhorn Oil Co.'s No. 1 Chassion bailed dry at 1,400 feet and will be deepened.

Wells Drilling

The fire interfered with drilling operations and in many cases drilling was suspended over Friday and Saturday. The Gulf Production Co.'s No. 8-A Weed is below 4,500 feet. No. 10 is at 2,455 feet. No. 5 Mann is around 3,135 feet and No. 6 at 2,615 feet. No. 3 Jack and Duff lease is drilling at 4,935 feet. No. 4 is below 2,900 feet. No. 7 Oakwood is at 2,455 feet. No. 8 is at 2,875 feet. No. 7 Roche is around 3,370 feet.

The Atlantic Oil Producing Co.'s No. 5 McLean will be deepened. No. 10 McLean is drilling at 4,235 feet and No. 11 around 4,300 feet. Nos. 14, 16 and 17 are locations. The Sun Oil Co.'s No. 3 McLean is deepening at 4,765 feet. No. 6 is drilling at 3,415 feet. No. 7 is standing idle at 3,400 feet. No. 8 is around 900 feet.

The Unity Oil Co.'s No. 91 McFaddin is at 825 feet. The Kinnear Oil Co. has a location for No. 1 Gladys and the Plummer Oil Co. one for No. 1 Quinn. The Deep Sand Oil Co.'s No. 1 Rush is idle at 3,490 feet. Hines' No. 1 Ewing is standing at 4,050 feet. Paggi & Co.'s No. 1 Gordon is drilling deeper at 4,315 feet. The Rio Bravo Oil Co.'s No. 54 T. & N. O. is rigging with a location made for No. 100. The Turnbow Oil Co. will deepen No. 1 Banks. The New Beaumont Oil Co.'s No. 1 Garrick, north of production, is drilling below 2,875 feet.

SOUTHWEST WILDCATS

(Continued from Page 48)

and east lines, is drilling at 2,177 feet in shale. Sun Oil Co.-Maddox & Goodman's No. 1 Carlyle, near Brooks County line in Survey 18, is drilling at 2,050 feet. The Texas Company-Lewis Oil Co.'s No. 1 Dinn, Survey 668, 200 feet to east and south lines, is drilling at 2,810 feet. Humble Oil & Refining Co.'s No. 1 Dowdy (fee), Survey 272, 425 feet to north and west lines, is drilling in sticky shale at 3,888 feet. H. B. Schlesinger, trustee's, No. 1 Hall, Survey 76, 660 feet to north and west lines, is location.

Jim Hogg County

Trussell-Cezeaux-Putman's No. 1 Palacious, Survey 232, Block 2, 150 feet to north and west lines, is rigging up. Rydal-Rycade interests' No. 4 Vela, Block 12, Survey 1, 321 feet to west line and 300 feet to north line, is drilling at 2,280 feet. O'Bryne and others' No. 1 Palacious, Survey 230, southwest 40 acres in Block 14, southwest corner, is drilling at 2,270 feet. L. M. Holden's No. 2 Jones, Share 27, 1 mile north of No. 1, 6 miles east of Hebbronville, has plugged back from 3,505 feet and is bailing to test at 3,100 feet. There were indications that water was coming in and the test may have to be recemented.

Starr County

Danciger and Dauchy & Maddox's No. 1 Newmann, Survey 232, 980 feet to north line and 930 feet to east line, is drilling at 830 feet. Southern Exploration Co. has set 10-inch casing at 301 feet in the No. 1 Russell, Share 173-B, Porcion 69. Deckle & McCarley's No. 1 Garcia, Survey 918, 150 feet to south and west lines, is drilling at 100 feet. Pearson and others' No. 1 Peffley, Survey 933, 250 feet to north and east lines, is drilling at 1,850 feet. Milham Corp. in Survey 616, E. A. Noble lease, 750 feet to north and west lines, has spudded in No. 1 Manton-Briggs.

Webb County

Alexander and others have spudded in No. 1 Moglia, Survey 670, 150 feet to north line and 660 feet to east line. R. F. Duggan's No. 1 Neal, Survey 1,008, 1,050 feet to south line and 1,600 feet to west line, is drilling at 2,190 feet. Cresswell-Fallin's No. 1 Gates, Block 1, Survey 17, 189 feet to north line and 2,640 feet to east line, is drilling at 600 feet. W. A. Wheatley and others' No. 1 Reiser, Block 7, Survey 1,618, 150 feet to north line and 300 feet to west line, is drilling in hard rock at 2,489 feet. M. J. Bashara's No. 1 Espejo, Block 75, Porcions 47-48-29-40, 222 feet to west line and 55 feet to south line, is drilling at 1,800 feet. Magnolia Petroleum Co.'s No. 1 Neal, Survey 132, Block 12, 150 feet to north and west lines, is drilling at 3,972 feet; No. 1 Paige-Garcia, Survey 611, 150 feet from west corner of Survey 139, is drilling at 2,965 feet. Lane-The Texas Company's No. 1 on the city limits of Laredo, drilled for water for the city, has been abandoned at 3,100 feet, at which depth it made sulphur water. Henne, Winch & Killam's No. 1 Billings, NE SW, Survey 43, 150 feet to north and west lines, is showing gas at 1,670 feet. Rawlins & Felton in Survey 736, Block 6, 150 feet to south and west lines, has made location for No. 1 Garcia.

Zapata County

Burns & Malone's No. 1 Bustamente, Block 38, 660 feet to north and west lines, is drilling at 700 feet. Earl K. Bateman's No. 1 Garcia, Survey 617, Block 7, 438 feet to south line and 300 feet to east line of block and survey, is drilling at 2,410 feet. The Texas Company's No. 3 Jennings, Cerrito Blanco Survey, cored sand at 4,056-59 feet.

Bexar County

Marland Oil Co.'s No. 1 San Antonio Trust Co., J. Pickens Survey, Block 1 2,280 feet to east line and 1,528 feet to south line, is location. B. F. Thompson's No. 1 Weiter in eastern part of the county is drilling at 1,410 feet.

Brooks County

Ballard & Underwood's No. 1 Lasater, Survey 331, 621 feet to north line and 150 feet to east line, is testing at 2,708 feet.

Brewster County

Green Valley Oil Corp.'s No. 3 Wilson, 20 feet south of No. 1, is drilling at 1,200 feet with oil showings at 602 feet and 1,000 feet. Expect to finish to 1,740 feet, depth oil was reached in No. 1, by middle of November.

Fayette County

Plum Oil & Gas Co.'s test, 12 miles west of LaGrange, is preparing to drill. The Texas Company's test, 3 miles north of Plum Oil & Gas, is drilling in chalk at 4,200 feet; test is 300 feet south of Colorado River, which marks the fault line. G. W. Paige and George W. Zeigin's No. 1 Rosa Russek, East Anderson League, 1 mile northwest of Schulenberg, one-fourth mile east of Foster Creek fault line, is drilling at 1,300 feet. Johnson Brothers are preparing to drill on tract where Fayette, Lavaca and Colorado Counties come together.

Gonzales County

L. L. Jones' No. 1 Lamkin, 2½ miles from Waelder, is drilling at 1,800 feet. Scott & Kercheval's No. 1 Billings, near Smiley, are preparing to bail again. Martin Oil & Development Co.'s No. 1 Preston, near Cheapside, near center of Pace one-third league, is waiting for casing. E. Lee Moore has spudded in for test near Cheapside.

Karnes County

Earl B. Reynold's No. 2 Butler, Block 43, 1,000 feet south of No. 1, expects to set 8¼-inch casing this week.

LaSalle County

DeLange, Eiser Development Co.'s No. 1 Dobie (fee), Survey 102, 600 feet to east line and 1,800 feet to south line, is drilling at 1,602 feet.

Live Oak County

W. G. Clark's No. 1 E. S. Adair, 1 mile east of Nueces River, 1½ miles east of Lucas gas field, is drilling at 400 feet.

Medina County

Medina Oil Co. has made location 300 feet southwest of No. 8 in A. Bruchet Survey for No. 9 R. Taylor. Ralph R. Lewis and others' No. 1 M. A. Keller, Andrew Northington Survey No. 8, located 150 feet south of center of north line, has spudded in. Pat Armstrong's No. 1 Lacey, Survey 427, northwest of Hondo, is drilling in Del Rio clay at 525 feet; No. 1 Long, on King ranch, is to set 15½-inch casing at 800 feet. Golden West Oil Co.'s No. 1 Joseph Courand, southwest of Castorville, is shut down while crew is being used elsewhere. J. A. Swayze's No. 1 C. A. Oeffinges, Survey 129, center of north 40 acres of Block 22, has spudded in. Ina Oil Co.'s No. 1 Charles

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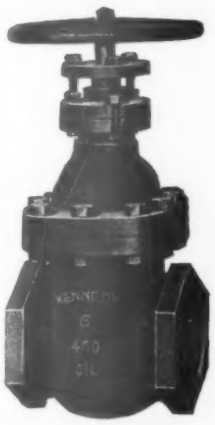

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Finger, Survey 746, about center of north half, is coring at 1,240 feet.

Maverick County

Hume-Lindenborne & Associates are preparing to start test near Eagle Pass.

McMullen County

Coyle-Concord Oil Co.'s No. 1 Mat Martin, John Verrejo Survey 215, southern part of ranch, is drilling at 1,422 feet. George M. Ball's No. 1 Kuykendall, Block 7, located 300 feet to south line and 600 feet to east line, is drilling at 1,410 feet.

San Patricio County

John Sigmund's No. 7 McCampbell, which is standing at 4,021 feet, is to be deepened to 5,000 feet.

Wilson County

Rosalie Oil Co.'s No. 2 H. F. Denning, C. W. Parrott Survey, 660 feet to north line and 250 feet to east line, reset casing and tested again but the cement failed to hold. This is the third time the test has been cemented and failed. The well will be abandoned and another drilled. Depth to top of sand is 2,135 feet and the company believes it can make a well in the next test. Humble's No. 1 Sellers is drilling at 3,180 feet a little northeast of Floresville.

SOUTHWEST TEXAS

(Continued from Page 48)

No. 8 Bruni and is on Block 44 and was completed at 1,701 feet. In the Randado Pool in Jim Hogg County Simms Oil Co.'s No. 7 Weil, in Block 10 of Survey 81, plugged back from 1,338 feet to 1,310 feet and made a 10-bbl. well. It is pretty well to the north end of the proven field. Simms company's No. 17 Palacious is a 125-bbl. well and is in the Simms tract out of the northwest quarter of Survey 291 and is 750 feet from the north line and 450 feet from the east line of the Simms b'ock. Magnolia company's No. 10 Merchant State Bank is in survey 415 and was completed at 1,239 feet and is a 55-bbl. well. Magnolia company's No. 14 Palacious is in Block 6 of Survey 291 and was completed at 1,287 feet and is a 50-bbl. well.

Of the two gassers completed one was the Associated Oil Co's No. 1 Myrtle Hale in the S. Benavides grant southeast from Bruni and northwest from the O'Hern & Seacord wells. It is reported to have got the sand at 1.552-57 feet. First estimates were 40,000,000. It is estimated now at 25,000,000 feet. Houston Oil Co.'s No. 1 Benavides in the Carolina-Texas Field on Survey 683 and located about a half mile west of the Associated-Carson discovery oil well in that field, was completed and is a 10,000,-000-foot gas well at 3,017 feet. It hit the sand 13 feet higher than in the Associated company's No. B-2 Webster in Survey 684, which made a 50,000,000-foot gas well. It is a little disappointing, though later developments may prove that it is not deep enough.

OKLAHOMA FIELDS

(Continued from Page 45)

NW SE, Section 27-3-5w. The same company has rigged up a rotary for No. 3 Abernathy, NW cor. SE NE SW, Section 27-3-5w. W. S. Critchlow is drilling at 1,542 feet after mudding off 30,000,000 feet of gas in sand at 1,468-1,512 feet in his No. 2, SE cor. SW NW, Section 27-3-5w. Magnolia Petroleum Co. is drilling at 150 feet in No. 1, SW cor. NW SW, Section 27-3-5w. Carter Oil Co. is drilling at 100 feet in its No. 4, NW cor. SE SE NE, Section 34 3-5w. Magnolia Petroleum Co. has a location for No. 2 Mitchell, SW cor. NE SE NW, Section 34-3-5w. Carter Oil Co. has a location for No. 2 Lindsay, SW cor. NE SW, Section 35-3-5w. Smith and others have a rotary rigged up for No. 1 Lee, SE cor. NW SE SW, Section 29-3-7w.

Stephens County

Tex-Homa Oil Co. has abandoned as dry its No. 1, SE cor. SE, Section 26-2-6w. Carter Oil Co. is drilling at 220 feet in No. 3, SE cor. NW SW NE, Section 2-2-5w. The same company is drilling at 215 feet in No. 1, NE cor. SW SW NW, Section 32-1-5w. Tex-Homa Oil Co. has a rig up for No. 1 Roden, SW cor. NE SE SE, Section 35-2-6w.

Grant County

Marland Oil Co.'s No. 1, SW cor. NW, Section 36-28-3w, is drilling at 4,232 feet in black lime and making 7,000,000 feet of gas. It passed chat at 4,165-86 feet.

Garfield County

Pulse Beamer's No. 1, SE cor. NW, Section 9-24-6w, is drilling at 205 feet. Sinclair Oil & Gas Co.'s No. 7-A Shaffer, SW cor. SE, Section 18-22-3w, is running tubing to pump. It found sand at 2,281-91 feet. The same company's No. 22, C NE NW, Section 30-22-3w, is drilling at 914 feet.

Enid Eighty's No. 6, NW cor. NE NW, Section 1-22-4w, sand at 1,426-37 feet and total depth 1,440 feet, pumped 20 bbls. Sinclair Oil & Gas Co.'s No. 58, SE cor. NE NE, Section 13-22-4w, sand at 3,688-3,720 feet and total depth 4,288 feet, made 792 bbls. naturally. The same company's No. 4, CSL SE NW, Section 18-22-3w, sand at 2,804-08 feet and total depth 2,831 feet, pumped 10 bbls. The same company's No 48, SW cor. NW NW, Section 18-22-3w, was abandoned as dry at 2,735 feet. The same company's No. 33, CSL NW NW, Section 19-22-3w, sand at 4,145-4,200 feet, made 420 bbls. naturally.

Caddo County

Livermore and others have abandoned their No. 1, SW cor. NE SW NE, Section 10-5-9w. It was dry at 2,466 feet. Flora Okla Oil Co. has completed No. 1, SW cor. NE SW NW, Section 12-5-9w, as a 12-bbl. pumper. It found broken sand at 1,871-2,434 feet.

Okfuskee County

Atlantic Oil Producing Co. is drilling ahead in No. 1, SE cor. SW NE, Section 35-11-9. It made 4,500,000 feet of gas in sand at 2,915-30 feet and 25,000,000 feet in sand at 3,133-45 feet.

EAST CENTRAL TEXAS RESUMING QUIETUDE

MEXIA, Texas, Nov. 6—The abandonment of Penn and others' test on the Harrison farm in the Bazette district, Navarro County, at a depth of 3,051 feet, will end for some time at least, all attempts to find oil northeast of the Powell Field. This test got the top of the Austin chalk at 2,288 feet and went through the chalk at 2,526 feet. It found a hard white sand at 3,044-51 feet. It was dry.

Garland Kent's deep test, No. 2 Woolens, Mathews survey, in the Powell area in Navarro County, was abandoned as a failure at 3,236 feet. It had a showing of oil at 3,192 feet.

In the Nigger Creek area in Limestone County, the Grayburg Oil Co.'s No. 1 Riddle, was abandoned as a failure at 2,678 feet. E. L. Smith's No. 1-A Rosson was dry and abandoned at 2,913 feet. The Transcontinental Oil Co.'s No. 5 Medlock, started at 900 bbls. from sand at 2,804 feet, total depth 2,814 feet. In the Nigger Creek Field, there are now only two wells drilling. One of these is a fishing job at a depth of 2,884 feet, with the top of the sand at 2,839 feet.

GULF COAST GASOLINE CUT; LUBS UNCHANGED

HOUSTON, Tex., Nov. 6.—Prices in zero cold test lubs from Gulf Coast crude are unchanged from last week. The Humble Oil & Refining Co. cut gasoline in Houston and all common Texas points 1 cent Friday, making the quotations 20 cents at filling stations and 17 cents tank-wagon. The Gulf and Magnolia companies met the reduction immediately.

Late in the day the Humble Oil & Refining Co. announced another cut of 1 cent per gallon, which applies in Houston only. The Houston price is now 19 cents at filling stations and 16 cents tank-wagon. The Magnolia Petroleum Co. posted the same quotations for Houston. The Texas Company, Sinclair Oil Refining Co., Gulf and Pierce Oil Companies are awaiting instructions from the East.

PRELIMINARY PROGRAM A. P. I. CONVENTION

(Continued from Page 34)

EVENING

8:00 PM GROUP MEETINGS—

Group 1—General topic: Oil Production Problems. Crystal Ballroom.

Note—The Mid-Continent Oil & Gas Association, the Chamber of Mines and Oil and the Rocky Mountain Oil & Gas Association are co-operating with the Institute in the holding of this group session.

"Lifting Oil With Gas," Frank F. Hill, Union Oil Co. of California.

"Restoring Pressure With Air, Gas and Water," A. A. Beard, Tidal Oil Co.

"Recovering Oil by Mining," (speaker to be announced).

"The Soda Ash Method of Recovery," (speaker to be announced).

Group 2—General topic: Petroleum Refining and Its Problems. Junior Ballroom, Mezzanine Floor.

Note—The Western Petroleum Refiners Association and the National Petroleum Association are co-operating with the Institute in the holding of this group session.

"Some Manufacturing Problems of Refiners," W. S. Zehrung, The Pennzoil Co.

"Refining Panhandle Crude," Walter Miller, Marland Refining Co.

"Advances in Petroleum Refining," (speaker to be announced).

Thursday, December 9, 1926

Note—Thursday morning and afternoon will be devoted to group sessions, arranged by general topics, at which the various subjects will first be treated in addresses and papers by selected speakers. After each speaker has finished, opportunity will be given for general discussion of the subject.

12:00 Noon Meeting of Board of Directors. Lounge Room, Sixteenth Floor. Luncheon for members of the board at 1 o'clock in luncheon room V-W.

MORNING

10:00 AM GROUP MEETINGS—

Group 1—General topic: Standardization and Improvements in Oil Field Production Methods and Equipment. Crystal Ballroom.

Rig Irons—Report on Standard Specification, H. J. Lockhart, National Chairman.

"Recommended Installation and Care of Rig Irons in the Field," Walter Jeffers.

Rotary Drilling Equipment—Report on Standard Specification, J. F. Lucey, National Chairman.

"Recommended Field Practices and Methods," Ernest J. Nicklos, The Texas Company.

Group 2—General topic: A Uniform Method of Oil Accounting. Writing Room, Mezzanine Floor.

"Proper Function and Relations of the Comptroller," Arthur Anderson, Arthur Anderson & Co.

"Tabulating Machine Method of Accounting," E. R. Hughes, Pure Oil Co.

"The General Balance Sheet," round table discussion of committee's report.

Group 3—General topic: Fire Prevention. Banquet Hall, Sixteenth Floor.

"Fire Prevention in Petroleum Marketing," F. C. Singleton, Standard Oil Co. of Indiana.

"Improved Methods of Applying Foam," (speaker to be announced).

"Lightning Fires in California," Ralph J. Reed, Union Oil Co. of California. (Illustrated with moving pictures.)

"Oil Storage and the Lightning Hazard," F. W. Peek, Jr., General Electric Co.

Group 4—General topic: Oil for Industrial and Domestic Uses. Banquet Hall, Sixteenth Floor.

Note—The American Oil Burner Association is co-operating in the holding of this group session.

"The Oil Burner Situation," L. L. Jacobs, president American Oil Burner Association.

"Making Fuels for Industrial and Domestic Burners," H. W. Camp, Empire Refineries, Inc.

"Burning Oil Under Stills and Boilers," Ernest H. Peabody, Peabody Engineering Corp.

AFTERNOON

2:00 PM GROUP MEETINGS—

Group 1—General topic: Standardization and Improvements in Oil Field Production Methods and Equipment. Crystal Ballroom.

Wire Rope and Manila Cordage—Report on Standard Specification, C. C. Scharpenberg, National Chairman.

"Purchasing Rope and Cordage on Specification and Recommended Practice on Installation and Care," J. S. McDaniel, Cordage Institute.

"Oil Field Usage of Wire Rope, Improvements Made and Experience With Wire Rope Purchased on Specification," L. B. Little, Standard Oil Co. of California.

"Review of Activities of Wire Rope and Manila Cordage Committee and Plans for Future," S. J. Dickey, National Secretary.

Pumping Equipment and Engines—Report on Standard Specification, W. L. McLaine, National Chairman.

"Proper Inspection, Care and Storage of Equipment," Hollis P. Porter, Gypsy Oil Co.

Steel Storage and Production Tanks—Report on Standard Specification, G. M. Vandaveer, National Chairman.

"Recommended Field Practice," (speaker to be announced).

Group 2—General topic: A Uniform Method of Oil Accounting. Writing Room, Mezzanine Floor.

"The General Balance Sheet," Continuation of round table discussion.

Group 3—General topic: Oil Geology. Junior Ballroom, Mezzanine Floor.

Note—The American Association of Petroleum Geologists is co-operating in the holding of this group session. Program to be announced.

Group 4—General topic: A Symposium on Corrosion. Junior Ballroom, Mezzanine Floor.

Note—The Mid-Continent Section of the American Society of Mechanical Engineers is co-operating in the holding of this group session. Program to be announced.

EVENING

(Announcement of program to be made later.)

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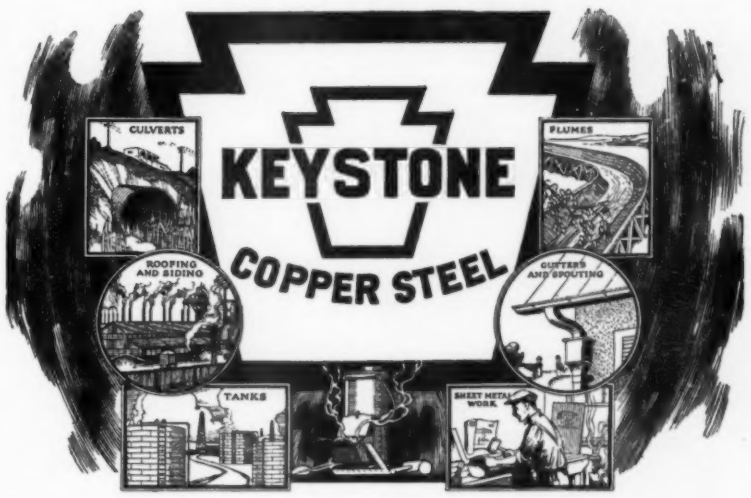

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Prominent septic tank and vault makers use Keystone for greater durability.

Successful engineers, contractors, and builders use Keystone for greater rust-resistance.

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Keystone demonstrated its excellence in the service tests of the American Society for Testing Materials.

Users everywhere favor Keystone for purposes demanding reliability and lasting service. Send for booklets.

Apollo GALVANIZED SHEETS
Recognized as the standard of quality since 1864. APOLLO-KEYSTONE Galvanized Sheets with the copper steel alloy base are unequaled for Culverts, Flumes, Silos, Roofing, Siding, Spouting, Gutters, Cornices and all forms of exposed sheet metal work demanding superior rust resistance. Write for Apollo booklet.

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High grade roofing plates, carefully manufactured in all details. Also American Coke and Charcoal Bright Tin Plates.

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American Bessemer Steel Sheets, American Open Hearth Steel Sheets, Keystone Copper Steel Sheets, Automobile Sheets—all grades, Special Sheets for Stamping, Electrical Sheets, Stove and Range Sheets, Japanning and Enameling Stock, Steel Barrel and Keg Stock, Ceiling Sheets, Black Plate, Etc., Etc.

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FOR SALE—Leases and production in Warren, Allen and Barren Counties. Have leases in Barren County joining producing leases and some within half-mile to 1 mile of production. W. P. Harley, Bowling Green, Ky.

WRITE for my state of Texas oil map free. Oil leases exclusively. Reference, Mercantile Agencies.
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W. T. Waggoner Bldg.
Fort Worth, Tex.

FOR SALE—200 acres in fee, Brewster County, Texas, $3 50 an acre. Texas Land Co., 5065 Cabanne, St. Louis, Mo.

HARTLEY COUNTY—OIL LEASES

10 Acres for $50

Includes Map and Cert. Title
Mail check to
J. W. Pigman, Owner, Dalhart, Tex.

AMARILLO PANHANDLE OIL FIELD

Underwriter Brainard Ranch oil and gas leases, 25,000 acres in Hutchinson County. Hutchinson County is the major producing area. New 5-year leases from 20 acres to 160 acres. Bought right, can sell at reasonable price per acre. Write for map and prices. I have handled, as underwriter, over 60,000 acres in the field on which over 80 wells are now drilling or producing. Ed R. Mayer, Amarillo Hotel Bldg., P. O. Box 1186, Amarillo, Tex.

SHALLOW DRILLING near production. We will give free acreage to responsible parties ready to drill immediately. VOE-Co., 408 Empire Bldg., Denver, Colo.

OIL AND GAS lease, 60 bbls. per day; settled production; pipeline connection; about 40 locations to be drilled; shallow field; 60 miles from Kansas City, no brokers need to answer. Box B-571, The Oil and Gas Journal, Tulsa, Okla.

420 ACRES gas and oil lease for sale cheap in shallow oil fields of Kansas. Also 23 and 24 Star drills at bargain prices. McCarty, LaCygne, Kans.

FOR SALE—Oil lease, Block Y, Hutchinson County, Texas. Surrounded by production. Will sell part cash, part in oil. Western Finance Co., Room 7, 208 Taylor St., Amarillo, Tex.

ATTENTION EVERYBODY

Attractive oil leases, long term, low rentals, near drilling wells and major oil company holdings, west Texas; titles guaranteed; low price; liberal terms; 40 acres upward. Live wire brokers solicited. Opportunity for large profits. Write, phone Grant 5225, or call on me. H. W. Stevenson, 817 Empire Bldg., Pittsburgh, Pa.

FOR SALE—150-acre proven lease with one well making average of 75 bbls. daily; located in Amarillo Field; lease is capable of much heavier production than this. Write or wire for particulars, to W. H. Mahon, P. O. Box 528, Amarillo, Tex.

SHALLOW PRODUCTION

Near San Antonio, details to bonafide purchasers only. George E. Ginter, Calcasieu Bldg., San Antonio, Tex.

SOUTHWEST TEXAS—WINKLER, LOVING, REEVES, WARD, PECOS, CULBERSON COUNTIES

Drilling blocks. Leases. Royalties. Ranches in fee.
H. F. Anthony, Pecos, Tex.

HAVE SEVERAL pieces of flush and settled production for sale in Oklahoma and Wichita Falls districts. Prices reasonable and terms can be arranged if necessary. P. O. Box 1144, Dallas, Tex.

SEND today for our attractive list of Texas leases, royalties, production and fee lands. American Lease & Royalty Co., 1313-G Santa Fe Bldg., Dallas, Tex.

TEN-YEAR oil leases. No. rentals. Crockett County, Texas. Send for true map. Paul Konz, Box 291, Fort Worth, Tex.

LEASES—PRODUCTION

FOR SEMINOLE County leases and royalties communicate with Brown Brothers & Co., Seminole, Okla. Box 41.

OIL LEASES—10,000 acres near Celina, Tenn. Rentals 50 cents. W. S. Silvers, 1523 So. Gallatin St., Marion, Ind.

HAVE BUYERS for flush or settled production in Oklahoma and north Texas. Vern R. Hartman, P. O. Box 442, Dallas, Tex.

GENUINE opportunity in oil. To complete well on 40 acres—1-32 interests are offered for $200 each; 1-64 interests at $100 each; completion of well guaranteed. Address for full particulars, P. O. Box 1195, Sapulpa, Okla.

NEW MEXICO—Selected leases, some Government geology, Union, Torrance, Lincoln Co. New 5-year leases, 5-cent rental, large or small tracts; 30 cents per acre now before development. W. M. Breuer, Box 650, Wichita Falls, Tex.

ROYALTIES—PRODUCTION

320 ACRES fourth royalty. Close up Winter 800-bbl. well. Phillips lease Jones County, Texas. John W. Robbins, Clyde, Tex.

WHITE SPACE at the top and bottom of an advertisement makes it conspicuous. Ask for it in your next advertisement. Figure the cost at regular rates per line.

ROYALTY—Write me at once for royalty in Seminole and Earlsboro territory. C. E. Deaton, Shawnee, Okla.

WANT TO BUY—Producing royalties. Give description, price, production, depth and age of wells; full details. Address P. O. Box 1359, Tulsa, Okla.

TEXAS PANHANDLE

Royalties in large or small units to suit any size buyer in fastest growing and most rapid developing oil field in Middle West. Write for list of offerings. B. O. Taylor, 306 Blackburn Bldg., Amarillo, Tex.

FOR SALE—EQUIPMENT

FIVE 12-H.P. Backus horizontal gas engines with friction clutch pulleys; excellent condition, were used to pull fans in schools this city and replaced by motors, $175 each or $750 for the lot. Box B-524, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE
7 Westinghouse motors, 440 volts, 3-phase 35-15 H. P. Standard oil well pumping equipment. Price $4,900.
G. E. GILBERTSON
Box 75 El Dorado, Ark.

FOR SALE—6-ft. x 26-in. x 26-in. motor driven planer complete. Room 20, Foster Hotel, Enid, Okla.

FOR SALE
Three practically new oil storage tanks, 8-ft. dia. by 40 ft. long; 5/16-in. plate; price, $575 each f.o.b. cars Little Rock, Ark.
Five No. 12 Sweetland Oil Filter Presses.
Wire, phone or write.
CONSOLIDATED PRODUCTS CO.
15 Park Row, New York City

FOR SALE—A complete diamond core drill outfit that is in first-class condition. Texas delivery. St. Louis Exploration Co., 5794 McPherson Ave., St. Louis, Mo.

20 K.W. 125-V. Fairbanks Morse Generator, complete with switchboard, first-class condition. Tulsa Armature Works, 526 N. Main St., Tulsa, Okla.

FOR SALE—EQUIPMENT

FOR SALE—4½-in. x 4½-in. x 8-in. stroke Burnham steam pump rebuilt, also No. 4 Jewel automatic steam engine like new; $150 takes both, Kinghan Machine Shop, Enid, Okla.

USED LINE PIPE FOR SALE
75,000 feet 3-inch.
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Casing 5-3/16-inch. to 15½-inch, inclusive.
Two miles 60-lb. first quality re-laying rails.
For immediate shipment from our Texas yards.
KEYSTONE PIPE & SUPPLY CO.
315 W. T. Waggoner Bldg.,
Forth Worth, Tex.

FOR SALE—Complete machine shop, motor driven tools. Room 20, Foster Hotel, Enid, Okla.

FOR SALE—Second hand pressure stills suitable for natural gasoline plants and storage purposes. Length 30', diameter 10', weight about 27,000 pounds, capacity 18,600 gallons. Steel riveted and welded. Manhole-top 20", end 24", bolted manhole cover. Price $400 each, f.o.b. cars, Neodesha, Kans.
The Standard Oil Co. (Kansas)
Phone 236 Neodesha, Kans.

EQUIPMENT WANTED

WANTED No. 2 or No. 3 National Machine with tools. State particulars. Box B-578, The Oil and Gas Journal, Tulsa, Okla.

IF PRICE is right I will pay cash for a good Star, Rotary or string of cable drilling tools. Lloyd W. Johnson, 308 Laurel St., St. Louis, Mo.

WANT TO BUY one 30 Star rig. Bryant Johnson, Shamrock, Tex.

MANUFACTURING MACHINISTS

CRAGO CUT GEARS
Worthy of your confidence. General machine work. 1416 Walnut, Kansas City, Mo. Phone Harrison 7660.

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THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

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ALL makes of oil field generators and motors repaired. Call
TULSA ARMATURE WORKS
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DEPENDABLE FINANCING SERVICE

Results sure, swift, economical. Employ the One Great Plan—the plan that gets money. Avoid abortive "mail order" and "phony" broker schemes. Describe proposition. Hansel Financing Specialits, 212-GE Earlham St., Pittsburgh, Pa.

DO YOU NEED MONEY for organizing or financing oil or mining deals? Write 117 E. 10th. Oklahoma City, Okla.

INCORPORATIONS

DELAWARE incorporators. Charters fees small, forms. Charles G. Guyer, 901 Orange St., Wilmington, Del.

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ZINGERY'S famous Abstract Maps, showing present owner and address, land, lease and royalty, also expiration date of leases and oil development. Ector, Haskell, Winkler, Shackelford, Callahan, Taylor, Jones, Nolan, Fisher Counties. Also potash map West Texas and New Mexico, $5. Zingery Map Co., Abilene, Tex.

THE ORGANIZATIONS that get the bulk of the oil industry orders are those who are known to the industry and who can combine quality with speedy service.

If you had your equipment listed in this section it would receive the same consideration that thousands are giving the good equipment advertised here.

ADDRESSES WANTED

INFORMATION as to address or location of oil and gas leaser, known as S. Fullerton. Please notify Box B-575, The Oil and Gas Journal, Tulsa, Okla.

HOTELS

TEXAN HOTEL—Pampa, Tex.; all conveniences; heart of Panhandle Field.

RANCHES—FARM LANDS

HAVE 20 tracts, different sizes, irrigated, cultivated; Rio Grande Valley land; best of vegetable, orange and grapefruit land; have bargains; investigate. Owner, Albert Snow, San Benito, Tex., where the sunshine spends the winter.

OZARKS—Ten acres near White River and proposed Dixie Lake, $100, $5 monthly. Abner Zimmerman, 1800 N. Fifth St., Kansas City, Kans.

FARM on the Rio Grande, 100 acres valley land, is irrigated either from irrigation district or private pump direct from river. Can't be beat for vegetables, citrus or staple crops. Shipping point 1½ miles. Priced right. Address Carl I. Boyer, Alamo, Tex.

IMPROVED Colo. ranches, $3 to $5 acre; bargains. A. Brown, Florence, Colo.

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Before disclosing your invention to anyone send for blank form.
Evidence of Conception.
Bulletin "How to Establish Your Rights" and complete information free.
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PATENT-SENSE — Valuable book (free) for inventors seeking largest deserved profits. References include prominent oil men. Write Lacey & Lacey, 718 F. St., Washington, D. C. Established 1869.

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

CLASSIFIED WANTS

CREATE AND BUILD BUSINESS

MAIL your advertisement now. It will be published next week. Cash with order.

POSITION WANTED

THOROUGHLY experienced geologist and valuation engineer, formerly with oil and gas section, Bureau Internal Revenue, now employed, wants connection with new oil company on moderate salary, expense and interest basis in Mid-Continent, Texas, Rocky Mountain or California fields. Box B-574, The Oil and Gas Journal, Tulsa, Okla.

EXPERIENCED OIL Accountant, stenographer and office manager wants position with progressive company or individual. Middle age; married. Available now. C. L. Michael, 201 East Sixth St., Burkburnett, Tex. Phone 325.

POSITION WANTED — As assistant to executive of oil company by geologist of wide experience in U. S. and foreign countries, and an ex-official of U. S. Geological Survey; now operating independently. Box B-573, The Oil and Gas Journal, Tulsa, Okla.

COMPETENT, energetic, college and polytechn. educated all around refinery man, lead burner, expert sulphuric acid, at different periods in charge of and personally operated every section in large and small concerns in N. Europe, S. Africa, S. America, Mexico and U. S. A., aggregate time over 25 years, open for engagement after New Year. Short or lasting jobs. Original copies or extracts of testimonials. SO4, H2, The Oil and Gas Journal, Tulsa, Okla.

POSITION wanted, oil tool machinist, joint turner, 20 years' experience. Box B-570, The Oil and Gas Journal, Tulsa, Okla.

POSITION as tool foreman. Can give best of reference. Box B-560, The Oil and Gas Journal, Tulsa, Okla.

Through the Classified Wants Section you can interest 25,000 oil men in your product or want. Mail your advertisement now for next week's issue. It doesn't cost much.

REFINERY — Have personally held every position to and including superintendent for both construction and operation; 14 years' continued experience; full knowledge first hand. Know art of handling men. I desire a change, but your company must be substantial with prospect of permanency and appreciate knowledge, energy, honesty and struct business. Box B-550, The Oil and Gas Journal, Tulsa, Okla.

CHIEF ENGINEER for lubricating oil company will be open for engagement January 1. Mechanical engineer, 16 years' experience manufacturing, selling, directing and training salesmen and service men. Exceptional experience marketing lubricating oils. Capable of correlating sales and engineering for permanent, increasing sales volume. Box B-543, The Oil and Gas Journal, Tulsa, Okla.

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OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

CONSUMERS' LEDGERS
We are prepared to furnish from stock standard forms of gas meter Consumers' Ledgers. Sample forms and quotations on request. First-class material and workmanship.
DERRICK PUBLISHING CO.
Oil City, Pa.

LEGAL FORMS FOR SALE—Form 389, Operating Agreement on prospecting permit. Form 388, oil and gas lease (Colorado and Wyoming), $3 per 100. Hoffhine Printing & Stationery Co., Casper, Wyo.

How to Interest Oil Men in Your Property, Product or Service

Because it is the oldest and best petroleum publication in the world, The Oil and Gas Journal has a wide circulation going to all the Oil Fields, Refineries, Natural Gasoline Plants, Supply Stores, Pipeline Stations, and offices of oil men everywhere.

Oil men read the Classified Wants Section every week. Therefore, if you wish to buy or sell Leases, Royalties, Production, Equipment, Machinery or Service, advertise in The Classified Wants Section.

It will enable you to get results that are not obtainable from any other source. Write your ad now and send it in for next week's issue, where thousands of oil men will read it.

The OIL and GAS JOURNAL
PRODUCING REFINING MARKETING
TULSA, OKLAHOMA

HELP WANTED

WANTED—Plane table man with at least three years experience. Prominent position. Apply 326 Atco Bldg., phone 3-5985.

EXPERIENCED
OIL WELL SUPPLY SALESMAN
Man who has had practical experience in selling oil well supplies and pipe. Good position for the right man. State experience.
KEYSTONE PIPE & SUPPLY CO.
607 Holmes Bldg., Fort Worth, Tex.

OIL COMPANY putting engineer-geologists into different phases of business to consolidate around present properties and prepare for expansion, has three vacancies for mining or petroleum engineering graduates, with from two to six years practical experience after graduation. Box B-551, The Oil and Gas Journal, Tulsa, Okla.

STEAM SPECIALTY SALESMAN

Wanted to represent us in open territory. Good commissions.

FRANCE PACKING CO.
6510 Tacony St., Philadelphia, Pa.

WANTED

WOULD BUY or trade for one Star 28 machine and drilling outfit, must be in first-class condition and bargain. Box 684, McAlester, Okla.

WANTED—Party to drill on 250 acres with option on 1,000 acres more near Los Angeles. Dr. Vanderlind, 1501 S. Figueroa, Los Angeles, Calif.

WANTED

WILL develop favorable Texas block; submit details. W. S. Covert, 3525 East 11th Ave., Denver, Colo.

TELEGRAM

Ed Kuntz, driller, left Shelby, Mont., a few days ago by automobile for Oklahoma. Could you endenvor to locate him? I would like to have him come and drill on Okalta well with Harry Rea on other shift; will pay three hundred and fifty-five dollars per month and board.

W. S. HERRON
Calgary, Alberta, Canada.

WANTED — A complete plane table outfit or any part. 326 Atco Bldg., Phone 3-5985, Tulsa, Okla.

WANTED—Live energetic broker to handle substantial stock issue of $100,000. Have production. Our properties practically adjoining 1,000-bbl. producers (initial) backed by wealthy oil producers. Address Box B-548, The Oil and Gas Journal, Tulsa, Okla.

WANTED—Leases, royalties, production or lands in fee, anywhere in Texas. American Lease & Royalty Co., 1313-G Santa Fe Bldg., Dallas, Tex.

BUSINESS OPPORTUNITIES

BELIEVE we have located real oil pool in Central Missouri; willing to show proof to reliable parties interested in helping develop; it's strictly "wildcat," but believe oil in large quantity will be found at 1,450 feet. Write Arthur Nickell, Fayette, Mo.

INVEST your money where it will earn you real interest from start, large future possibilities. Write Irwine M. Lock, 17 N. LaSalle St., Suite 460, Chicago, Ill.

I OWN 500 acres with ½ million pine and ¼ million hardwood timber, Sec. 34, Twp. 7, R. 10W, Sabine Parish, La. Price $10 fee simple. P. O. Many, La. G. C. Boswell, care Sheriff's Office.

POTASH IN TEXAS! Carefully compiled copyrighted map covering 6,000 square miles, 85 counties, West Texas and New Mexico, showing recent potash discoveries and location three Government tests just starting. Price $5. Pamphlet quoting authentic authorities on subject $2 extra. Also famous Zingery oil maps several West Texas Counties. Zingery Map Co., Abilene, Tex.

STRUCTURE—Have large structure that will stand checking, in Quay County, New Mexico, just across the Texas line. Would like to hear from parties interested in financing well. Wade Connelly, Independence, Kans.

CAPITAL — An experienced, dependable broker with following, will give personal atteniton to financing of worthwhile proposition. B. W., 810 Broad St., Newark, N. J.

RAISE CAPITAL
Through the sale of securities in your corporation. Worthy enterprises only; 25 years experience behind our plan.
NORTHCLIFFE CORPORATION
28 West 44th St., New York

WE HAVE now under lease some 8,700 acres in good wildcat territory north and west of Farmersville, adjoining city limits, within 4 miles of well now being drilled; we are now ready to negotiate for drilling contracts. Write, wire ,or better, come at once and see this territory. S. J. Carver, trustee, Farmersville, Tex.

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7 lines	2.45	4.20	5.95	7.70
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(Six words usually make a line).

Compute white space at the above rates. Mail your advertisement to

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

SEVERAL large solid blocks in west Texas and eastern New Mexico, free for drilling contracts. W. J. Williams, Box 235, Plainview, Tex.

PETROLEUM prospectors, geological, will select, secure drilling contract upon and test wildcat acreage for you at cost, taking part of acreage so secured as compensation. Nicolle & Wife, Box 644, Corsicana, Tex.

Chicago Not Expecting Any Change

Fair Early Demand for Gasoline With Many Inquiries From Jobbers Who Would Buy Later

By J. B. Waldo

CHICAGO, Ill., Oct. 8.—There is little expectation of any real change in this market over this week.

The weather locally was fine over the week-end, but not good over parts of the territory, and the forecast for the week is for colder weather with rain and snow, which would increase the consumption of heating oils, but not of motor fuels. There was a fair early demand for gasoline with many inquiries from jobbers who would buy later. The price quoted is universally 9½ cents for motors gasoline. There is a little better demand for the higher gravities. Kerosene remains steady. Gas and fuel oils are unchanged as to price or market conditions, but some firmness will be given with the coming of colder weather.

Local tank truck distributors have advanced the tankwagon prices of fuel and furnace oils ½ cent on distillates and ¼ cent on gas and fuel oils. Standard and Roxana have made no changes and expect to hold present quotations, but Shaffer Oil and most others have advanced, effective today, with a week's notice to contract holders. Colder weather and heavy buying of Illinois coal for export to England have advanced coal prices, and oil men are keeping in line.

Effect of Crude Cuts

The recent crude declines have continued the waiting policy of buyers of pretty nearly every petroleum product. With many jobbers everything that happens is a reasonable reason why they should be able to buy at lower prices without consideration of what must follow such a policy in the way of restricted stocks and reduced sources of supply. The representative of a large refiner from Group 3 said during the week regarding the present prices that there was no profit in the refining business and that many of the older plants were being operated with as little repairs as possible and practically no replacements; that the time must come soon when they would have to be practically junked, (that was his word) unless they could get better prices. Unless the refiners can receive for their product a price that will pay all expenses, including the necessary repairs and replacements, they will be forced out of the refining business. Now a good deal of the gasoline and some other products but chiefly gasoline that is marketed at the lowest costs to the distributor comes from these plants. If every happening in the industry is a good reason why the income of the refiner should be lowered then the distributors may find that they will be able to obtain supplies from only some of the big companies who are better able to care for their financial interests.

It is a curious fact that some of the larger distributors admit this to be the case and say that it is not for their best interest that the refiners' profit be cut too low or eliminated entirely yet these same oil men when they come into the market are such close buyers it is frequently said that if such and such concerns bought at a certain price the market for gasoline must be a quarter of a cent higher. One of the largest stated he could "always buy at a quarter-cent under the market and no sight drafts either." Now a quarter of a cent a gallon on an order for 25 to 50 cars of U. S. Motor gasoline is quite an item to come from the refiner's normal profits.

Distributors during the past week have been bearing down heavily on the sellers of gasoline. They have forced the price of U. S. Motor gasoline down to 9½ cents and say they expect to be able to buy at less than that the coming week, if there should be a crude decline. Yet the refinery market for gasoline is below the opening of the year with crude even at the lowest of the recent declines above the price of crude at that time. There are several reasons given for the waiting policy of the distributor, one being the expectation of lower costs due to possible crude and tankwagon declines and another being the custom of many merchants in all lines to reduce their inventories as much as possible at the end of their year in many cases the last day of December.

The actual consumption over the territory is now undoubtedly larger than during the same period of 1925. The weather is not so cold. Roads are in very good shape generally and the country business has been improved very greatly over September. There has been some snow in the northern part and the usual exodus has taken place from the north woods where many stations close up during the winter but even in these districts the season lasted nearly one month longer than last year. Sellers rely on this increased consumption to bring buyers into the market and some are being forced to buy even with the present waiting attitude. It is quite generally assumed that jobbers' stocks are very low and this thought is proved to some extent at least by the rush that is wanted on nearly every spot order. But there are a large number of distributors who receive the bulk of their supplies on contracts based on actual market prices date of shipment with an assured profit and these distributors are ordering out their monthly quotas very regularly now and have about all the gasoline they need to care for their trade at present so that the actual spot business is coming from the smaller dealers who have small storage and from the very large dealers who ask for bids for their requirements at regular intervals whose business always must go to some refiner of large capacity.

Demand continues to be very largely for the U. S. Motors grade with some better demand for the higher gravities and very little for any gravity below the Motors grade. Occasionally one learns of some buying of the 56-58 450 endpoint but the number of buyers of this specification is limited right now and will be until next spring over the bulk of this territory. In the southern parts there is a better demand for the 450 endpoint but it does not get to this market. Refiners of the antiknock gasolines continue to report great interest in their product and several state their present output is under contracts for some time or until they can increase their output. Locally at least there is little movement in natural gasoline but the market is holding. The price situation in Ohio continues unsettled, the Roxana Corporation having reduced its price 1 cent a gallon which price had not been met by the Standard Oil Co. of Ohio up to the time of writing this letter.

Demand for Kerosene

The demand for kerosene is fairly active for single cars and small lots but there is only an occasional inquiry for larger quantities and these are slow to result in business. There are several refiners who have bought and are now receiving kerosene for their own distribution and who have nothing to offer from their own refinery and if a large order were to be placed now it might be difficult to secure prompt delivery. There is also some demand for the 42-44 gravity and this is also rather scarce. Just why a buyer will specify the higher gravity is a question with some oil men as the two grades are so nearly alike they practically overlap. One refiner stated his product would pass for either grade being better than 42 gravity under any circumstances. The matter of habit will account for many of the 42-44 kerosene orders. There has been little if any change in price and the trade is paying from 6¾ to 7 cents for the 41-43 water white kerosene.

Distillates Slower

Distillate demand has been checked by the warmer weather which has reduced actual consumption. The last spell of colder weather moved most of the surplus here and the market seemed a bit more firm for a day or two but since then the demand from distributors has been light. Consumers have had their first fill of furnace oils and are supplied for some time depending on the size of their tanks. With the present weather, in a moderate sized house, 100 gallons will last for 30 days. Newly installed burners are generally supplied with a 500 or 1,000-gallon tank but the majority of the burners less recently installed have about 200-gallon storage capacity so that the demand for furnace oil will drag along until real winter is here. The offerings are more ample both from previous sources and from some refiners who did not plan during the rush of the gasoline demand to have any distillate to offer this year or at most only sufficient to meet the demands of some of their trade. There are several of these and while they all profess faith in the coming market and remember the remarkable condition that developed here in furnace oils last spring they are now willing to sell some distillate. The Mid-Continent Petroleum Corp. has announced it has so changed its manufacturing schedule as to have a supply of three grades of furnace oils ranging from a 32-34 gas oil to a 38-40 distillate all with a low flash and cold tests and refined specially for the use for which they are offered.

Some distributors who are interested in the number of possible new accounts in their territory have been checking up on the number of oil burners installed this fall and several both here and in other western cities have stated that the number of installations was less than a year ago. There are less evidences of oil burners being installed around Chicago in the shape of tanks delivered to homes to be installed. Some oil men estimate the number installed in their district as from 25 to 35 per cent as many as were installed during the same time last year. One oil man stated the trade would be surprised to know how many oil burners had been taken out but personal knowledge of many homes heated with oil does not indicate this is general. This oil man is located in a large western city.

Gas Oil Firm

Gas oil is firm and is at least holding its own as to price. There has been some new buying by utility concerns and those who have contracts for the season are ordering out more gas oil and want early deliveries. There is some industrial buying though this is largely for immediate needs and a good deal of this oil is being used as furnace oil. It is a most usable oil for this purpose and according to distributors serves a larger number of burners of the modern type than any other kind of oil. However, gas oil today means in this market any oil that will pass the U. G. I. specifications and these are not fixed as to gravity so that oils with a gravity as low as 28 degrees are sold as gas oil. Quite large quantities of 30-32 gravity oil have been shipped here from northern Louisiana and elsewhere, the price usually being ⅛ cent lower than a 32-36 oil from the same refinery. The common 32-36 cracked, dark gas oil is selling at 4⅛ to 4¼ cents. Lighter colored oil brings as high as 4⅜ cents on some sales. The exact premium of the light over the dark or the straight-run over cracked is a matter for settlement between the buyers and sellers and depends a good deal on circumstances.

Fuel Oil

There is very little new to be said regarding the fuel oil situation here. The trade is selling a fair amount of oil but very largely the sales are in small quantities and for short periods as buyers in this market are holding back from making and large commitments. There is a feeling here that the sale of Oklahoma fuel oil in this territory will be considerably restricted by the more liberal offerings from local and nearby refiners. The volume of these offerings will be increased as soon as the new Roxana refinery at East Chicago is in operation. These refineries have a very considerable advantage in their location and already many larger consumers are under contract with one of these. Some large steel companies who formerly were spot market buyers for at least a part of their needs state when asked for orders that they are under contract until June 30, of next year. Whether these refineries would have as much fuel oil to offer to consumers with lower prices ruling is a question. Some contracts are stated to be based on a price close to $1.25 per barrel for an oil with a low gravity and the usual characteristics of a cracked fuel oil. These oils work well in large plants but the smaller consumers without preheating and sturdy equipment in the shape of lines, blowers and the like could not use them satisfactorily. There has been no appreciable change this week in prices here but the market is not strong. There is a desire for business on the part of several refiners and the feeling is that for a good sized order ready to be placed quotations could be shaded, in fact as much has been intimated in some cases. The entire fuel oil industry here both buyers and sellers believe that a crude cut is inevitable and that lower prices would result. The reduction in crude prices in the Louisiana Field did not apply to Smackover, the price of which remained unchanged but the demand here for this product has been met to some extent by the lower prices available for refinery fuel oil from Oklahoma. There has been a small change in Smackover quotations which are now $1.25 to $1.30 for a treated Smackover fuel oil. Some untreated oil is occasionally offered but buyers are rather shy of using it as it may prove to be oil from earthen storage and full of water and sediment. However, some refiners in that district have offered to contract over a 4-month period on heavy Smackover fuel at $1.22½ for considerable quantities.

Lub Competition

Lubricating oils remain very much as they were. There is a great deal of competition and while the lists are unchanged sellers freely accuse each other of making concessions in prices, or terms or both. Some large contracts here are placed at figures that conservative sellers will not try to duplicate. They would like to say that such terms could not be made except that they are being made to get the business of large users. The local cab company is stated to have a contract that is just about all in the buyer's favor. New competition is coming into the market almost every week. The Standard Oil Co. of Indiana is about to announce a new motor oil under the trade

name of "Ico-Vis" that has alluring qualities for the winter driver and is claimed to have unusual lasting qualities. There is no change in the industrial demand which continues active.

Tankwagon Situation

There has been no general change in tankwagon quotations since that of October 26. New prices have been put into effect at Minneapolis and St. Paul where price conditions have never been really stabilized since the last trouble, although normal prices have been quoted. The Standard Oil Co. of Indiana reduced its prices 1 cent on November 1, and the next day the Pure Oil Co. made a price 3 cents lower than the Standard's new price, which was met on the day following by the Standard company. The present prices including the 2-cent tax are tankwagon 17.2 cents and service station 19.2 cents. This is the most noticeable cut but there are some minore points where the prices are below normal owing to local competition. Many of the best posted oil men regard the present wide spread between the refinery and tankwagon prices a menace to stability in the industry so far as this territory is concerned. The local cost of the usual grade of gasoline laid down here shows a spread of 6⅜ cents and the manager of one large distributing organization said that 4 cents was a liberal margin and the most that was safe was 5 cents. When the margin is larger the temptation is to increase business by lopping off the excess from the selling price to the consumer. Early in the week there was a feeling that there would be another change at an early date but the better position in the Seminole Pool has carried the idea over that crude prices may be held although there is an insistent demand from refiners who want lower costs and from distributors who believe a crude adjustment must be made to secure a stable market which is much desired right now for the remainder of the year. The head of one integrated company said what he and others wanted was a cut now and then in the spring advances according to what the conditions then prevailing would justify.

CALIFORNIA RECEIPTS AND PETROLEUM IMPORTS

Imports of crude and refined oils at the principal United States ports for the week ended October 30 totaled 1,376,000 bbls., a daily average of 196,571 bbls., compared with 1,006,000 bbls., a daily average of 143,714 bbls. for the week ended October 23, and a daily average of 163,964 bbls. for the four weeks ended October 30.

At Atlantic Coast Ports—	
Baltimore	354,000
New York	448,000
Philadelphia	47,000
Others	142,000
Total	991,000
Daily average	141,571
At Gulf Coast Ports—	
Galveston district	151,000
New Orleans and Baton Rouge	167,000
Port Arthur and Sabine district	25,000
Tampa	42,000
Total	385,000
Daily average	55,000
At All United States Ports—	
Total	1,376,000
Daily average	196,571
Daily average four weeks ended	163,964

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended October 30 totaled 470,000 bbls., a daily average of 67,143 bbls., against 473,000 bbls., a daily average of 67,571 bbls. for the week ended October 23, and a daily average of 83,929 bbls. for the four weeks ended October 30.

At Atlantic Coast Ports—	
Baltimore	170,000
New York	143,000
Philadelphia	80,000
Others	77,000
Total	470,000
Daily average	67,143
Total Atlantic and Gulf Coast Ports	470,000
Daily average	67,143
Daily average four weeks ended	83,929
Distribution of Total California Oil Receipts is as follows:	
Gasoline	175,000
Gas oil	225,000
Fuel oil	70,000
Total	470,000

WEATHER CURTAILING CONSUMPTION IN EAST, BUT PRICE UNAFFECTED

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, Room 543, 30 Church St., New York City

NEW YORK, Nov. 6.—Continued bad weather had its effect in curtailing gasoline consumption on the Atlantic Seaboard during the past week, a development which seemed not to be reflected in the price situation, however. There was no important change in the tankwagon market anywhere in the territory. In fact the Standard Oil Co. of New York still maintains its tankwagon price in most sections of its field at the highest of the year, namely, 21 cents a gallon. This is 3 cents per gallon above the current tankwagon market of the Standard Oil Co. of New Jersey.

The price situation is believed to reflect principally the fact that gasoline is in comparatively strong hands, and that the amount of distress gasoline hanging over the market is small. Of course this may not be true of other territories; if it is not it is possible such distress gasoline as may exist may find its way into this market, although it has not done so to any degree as yet.

It is pointed out in some quarters that the Standard Oil Co. of New Jersey's reduction on the Atlantic Coast may have been due somewhat to the export situation, this company being one of the biggest exporters of gasoline. The export price of gasoline has been cut here more than 2 cents a gallon from the year's peak, while the Gulf Coast export market is also down considerably, these reductions being directly traceable to a reported policy of reducing prices in Europe; in fact on November 1 there was a reduction equivalent to 3 cents a gallon by the Anglo-American Oil Co. in England. This is representative of the price trend throughout Europe, according to local exporters, and some believe the trend is now being reflected in this country.

Fuel Oils Firm

The markets for kerosene, furnace oil, gas oil, Diesel oil and bunker fuel oil show a contrast to the present gasoline market, that for the former products being stubbornly firm. Aside from a feeling that in view of mounting crude oil production, all products may ultimately be cut in price, the actual sentiment in the trade is that fuel oil, at least, will move upward in the near future. This is due to a heavy demand with little addition to the supply of heavy oil. Neither Panhandle nor Seminole present a direct menace to the market for heavy oil products, in the opinion of marketers.

Heavy Mexican oil is said to be getting steadily harder to obtain. This is an important consideration from the viewpoint of fuel oil prices on the Atlantic Coast.

The reduction of 10 cents a barrel in the price of bunker fuel oil by the Standard Oil Co. of New Jersey made in October has not yet been met by the company's competitors, who are still quoting $1.75—and getting it, according to reports.

Diesel oil is generally quoted at $2.50 a barrel. The movement is extremely heavy, going into vessels for direct use, and also into domestic channels.

Furnace oil and kerosene are firm in price, with little change in demand for the latter, but a marked increase in sales of the former, as weather conditions have been ideal for the use of this product.

Lubricants

The lubricating oil market is steady. A slight reduction in prices had been anticipated around the first of the month, but its failure to arrive has cause some encouragement to marketers. Demand for automobile lubricants has fallen off somewhat but the movement of lubricants into industrial channels has offset this to some extent. Railroads are said to be buying heavily in this section, also.

Paraffin wax is unchanged in price. The market is dull. Petrolatums are also dull and unchanged.

The reduction in the price of gasoline in England, amounting to 1½d. per gallon, or about 3 cents, is indicative of the trend throughout Europe. The oil companies are said to be of the belief that lower prices will stimulate consumption considerably, and are therefore not worried much by this development.

The bulk movement of both gasoline and kerosene has been restricted during the past two weeks. Cased shipments of kerosene are holding up as a result of steady demands from the Far East, especially China and Australia. Other products are moving in desultory fashion. Perhaps the most disappointing showing is being made by lubricants and wax, demand for which have been considerably below expectations.

The following table shows principal exports of petroleum and petroleum products from New York during the last three weeks (figures in gallons unless otherwise noted):

	Week Ended Nov. 3	Oct. 27	Oct. 20
Gasoline:			
Bulk	.....	.....	3,089,254
Barrels	105,000	187,500	210,000
Cases	692,240	1,629,948	2,512,500
Kerosene:			
Bulk	690,712	.....	981,116
Cases	2,635,440	2,424,430	2,845,680
Lubricating oil:			
Bulk	.....	.....	525,021
Barrels	1,361,450	1,067,150	1,303,750
Cases	114,680	116,980	297,760
Lubricating grease:			
Barrels (lbs.)	1,149,750	1,959,750	450,000
Paraffin wax:			
Bags (lbs.)	2,026,200	1,191,960	433,840
Bbls. (lbs.)	.....	1,391,275	.....
Petroleum asphalt:			
Bbls. (lbs.)	692,550	1,436,400	2,105,200

The foregoing figures include only shipments of 500 bbls., 1,000 cases, or more.

Tanker Market Active

Oil marketers are at a loss to account for the extreme activity in the oil tanker charter market, both here and abroad, if it is not due to a heavy demand for oil. When leading oil companies go into the market and secure all the boats they can get, including many for a period of 14 months in advance, that is about the only conclusion to draw.

On the whole, the actual amount of oil being carried in oil tankers is well up to expectations. Although there has been a seasonal slump since midsummer, more oil is being carried than a year ago. However, the activity in the tanker chartering market now contrasts with acute weakness a year ago. Rates are also at the peak, and in some cases double those of a year ago.

New fixtures include the following:

Tanker Hampton Roads (Am.), 4,623 tons net, Gulf to New York, 42½ cents a barrel, option Boston, 45 cents, November loading.

Tanker Tracy Brothers (Am.), 3,511 tons net, Gulf or Curacao to United Kingdom-Continent, 45s., December loading.

Tanker Athelmere, (Br.), 3,660 tons net, Curacao to the United Kingdom-Continent, fuel oil, 42s. 6d., December loading.

Tanker Baldbutte (Am.), 3,836 tons net, Gulf to United Kingdom-Continent, 42s. 6d., November loading.

Tanker Derbyline (Am.), 4,394 tons net, one year's consecutive voyages, Gulf to United Kingdom-Continent, 33s., January loading.

Oil Receipts Increase

The record of oil receipts at Atlantic Coast ports for the week ended November 3, made a very creditable showing. Total estimated receipts were 3,509,000 bbls., or a daily average of 501,000 bbls. A big gain in receipts was recorded from the Gulf Coast, the daily average being 311,000 bbls., compared with 227,000 bbls. the preceding week, an increase of 84,000 bbls. Baton Rouge supplied this increase.

Renewed imports brought up the imports from South America to a daily average of 82,000 bbls., which is the largest daily average of any week so far in the history of the industry. Mexico during the week supplied only 17,000 bbls. a day.

The following table shows estimated daily average receipts of crude and refined oil by water at Atlantic Coast ports for the last three weeks; also monthly record for the last 12 months (figures in barrels):

	Week Ended Nov. 3	Oct. 27	Oct. 20
Gulf Coast	311,000	227,000	271,000
Pacific Coast	91,000	85,000	82,000
Mexico	17,000	37,000	91,000
*South America	82,000	34,000	9,000
Total	501,000	363,000	453,000

Daily Averages by Months

1926:	Gulf	Pac.	Mex.	*S. A.	Total
Oct.	270,000	71,000	61,000	43,000	445,000
Sept.	299,000	98,000	63,000	58,000	518,000
Aug.	320,000	61,000	71,000	46,000	498,000
July	360,000	66,000	115,000	36,000	577,000
June	396,000	104,000	117,000	18,000	635,000
May	318,000	66,000	114,000	25,000	523,000
April	326,000	92,000	126,000	20,000	564,000
Mar.	317,000	97,000	152,000	26,000	592,000
Feb.	332,000	73,000	104,000	18,000	527,000
Jan.	279,000	59,000	65,000	31,000	434,000
1925:					
Dec.	298,000	56,000	90,000	13,000	457,000
Nov.	259,000	36,000	80,000	12,000	387,000

*Including Trinidad.

The foregoing estimates are based on carrying capacity of incoming oil-laden tankers.

CALIFORNIA GASOLINE MARKET SOFTENING

LOS ANGELES, Calif., Nov. 6.—The most favorable development from the point of view of oil marketers was the apparent defeat of the gasoline tax measure, which would have increased the tax 1 cent per gallon. Figures just published show that during the quarter ended September 30, almost $4,850,000 was collected through the present gasoline tax. This is an increase of almost a half million dollars, or 11 per cent, over the same quarter of 1925 and proves the present tax of 2 cents per gallon is sufficient to cover cost of improvements originally planned to be paid by the gasoline tax.

The tax during this quarter was assessed on almost 245,000,000 gallons, the largest distribution in any quarter since the 2-cent gasoline tax went into effect in October, 1923. The Standard Oil Co. paid tax on over 63,800,000 gallons, Shell company on almost 39,200,000 gallons, Richfield Oil Co. on over 34,600,000 gallons, Union on over 26,500,000 gallons and the Associated Oil Co. on over 25,600,000 gallons. These companies were far ahead in gasoline distribution.

While the majority of U. S. Motor gasoline of 54-58 degrees gravity A.P.I. and 437 degrees Fahrenheit endpoint sold for local consumption is commanding a price of 9½ cents, the market is soft and some isolated sales have been made as low as 9 cents. Over 175,000 gallons was exported to the Atlantic Seaboard during the week, most export sales at present being made at from 8¾ cents to 9 cents.

Natural gasoline continues to sell at 11½ cents in most cases. The spread has increased, as some isolated sales have been made as low as 11 cents, other spot lots commanding as high as 12 cents. The latter two cases are few and far between, the bulk moving at 11½c.

Fuel oil is moving in good volume. During the past week Pacific foreign trade took almost 215,000 bbls., the Atlantic Seaboard over 191,000 bbls. and the Atlantic foreign trade consumed almost 161,000 bbls. While the demand for fuel oil is improving, prices remain weak, some spot sales being reported as low as 80 cents. Diesel oil prices are also irregularly weaker in odd spot lots.

POTASH DEVELOPMENT

SAN ANTONIO, Tex., Nov. 6.—Dr. David Flood, geologist and paleontologist, has turned 19 sections of land in Sutton County to A. P. Lundin of New York and the National Potash Co. of America is being organized and will take over the proposition and develop it for potash. Doctor Flood is geologist in charge. Core testing will start at once.

SIL-O-CEL
HEAT INSULATION

The Argentine refiner whose re-run stills are pictured here, has standardized on Sil-O-Cel insulation. Sil-O-Cel block is used on still tops and towers, covered with Sil-O-Cel plastic cement and Celcote waterproofing compound. The settings and bases of the stills are insulated with Sil-O-Cel C-22 brick.

To Save the Fuel that would otherwise be wasted through heat radiation—insulate with Sil-O-Cel. The entire cost of insulating will be returned within a year if the fuel you burn has any commercial value whatever.

To Improve Temperature distribution in stills, absorbers and cracking units keep the heat inside with Sil-O-Cel insulation. Leading equipment manufacturers endorse this practice.

To Waterproof your heated equipment it is necessary first of all that you reduce its external temperature to a point below the failing point of waterproofing preparations—by insulating. There is no successful alternative.

Sil-O-Cel engineers have devised simple methods and produced dependable materials for insulating every type of equipment used in refinery or gasoline plant.

If your files on insulation are not complete write to the nearest office of the Company for our 64-page handbook on the insulation of refinery and gasoline plant equipment.

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TAX PAID BY MOTORISTS IS RAPIDLY MOUNTING

(Continued from Page 44)

motor fuel taxes go to highway construction and maintenance; but to this rule there are increasingly important exceptions. In Georgia, 40 per cent of the tax goes to general state expenses, 60 per cent to highways. Montana devotes 70 per cent to highways and passes 30 per cent to the general state fund. North Dakota uses the first $200,000 for general purposes, the remainder for highways. Texas turns over 25 per cent to the school fund, and the remainder to the highways. Three states turn over the entire revenue to the counties, for their road work; 16 states divide it with the counties; 3 states share it with the cities; 20 states employ the entire revenue on state highway work.

Views of Tax Officials

Among officials administering motor fuel taxes, there are quite amazing differences of opinion. Thus, W. S. Booton, director of excise, Tennessee, asks: "Is there a limit in sight for gasoline tax rates?" He expresses the opinion that if the tendency to raise the rates is allowed to go unchecked, in five years there will be no more gasoline taxes at all.

At the other extreme, James M. Hayes, Jr., motor vehicle commissioner, Virginia, declares:

"I feel there should be a uniform rate limit on the gasoline tax, and I also feel that this tax should be higher, as eventually it will supplant the automobile license tax."

In New York, where a legislative commission is investigating the subject, some automobile clubs have declared for a gasoline tax, provided the charge for license number plates is reduced to a nominal and uniform sum. In as much as New York collected over $25,500,000 for motor car licenses fees in 1925, such a change would mean that something like $20,000,000 would be subtracted from the total of these fees, and collected in the form of gasoline taxes.

Everywhere the tendency is to increase the gasoline tax rate. A number of legislatures raised it at their 1926 sessions, and there are movements in several states which at present have the more moderate rates to increase them at the forthcoming legislative sessions.

In some states where increases are threatened, the opponents have vigorously protested that if this is undertaken they will fight the entire system in the courts, and they declare that in some at least of the states this entire motor taxation will be found repugnant to the state constitution. There is also strong opposition among motorists to any plan which diverts any part of the revenue from highway uses.

In view of the importance of these and many other problems, the forthcoming St. Louis Conference is regarded as highly important. It will be indeed unique in one regard, for the Canadian Provinces as well as our states will be represented.

William A. McAtee, chief inspector of oils for Missouri. W. S. Booton, director of excise, for Tennessee; Edward Martin, auditor general of Pennsylvania; James Duce, state inspector of oils for Colorado; T. W. Bass, chief of gasoline tax division, Nebraska, are among the leaders in organizing the St. Louis Conference.

KANSAS FIELDS

(Continued from Page 45)

abandoned well. White Eagle Oil & Refining Co. has a location for No. 2, Blakeman, NW cor. SE NE SE, Section 4-28-6. B. G. & N. Oil Co. has a location for No. 1 Ramp, NE cor. NW NW, Section 26-28-7. Empire Gas & Fuel Co. is drilling at 2,580 feet in No. 3, NE cor. SW NW SE, Section 12-27-7. It passed a showing of oil in sand at 2,160-65 feet. Mid-Kansas Oil & Gas Co. is building a rig for No. 5 Barnhill, SW cor. NE NW NW, Section 23-27-7. Phillips Petroleum Co. has spudded No. 18, SE cor. NW NE NW, Section 23-27-7. Joe Liggett is drilling at 150 feet in No. 2 Stearns, SW cor. Lot No. 32, Section 19-26-8. Tom Johnson has spudded No. 4, SE cor. NW NW SW, Section 3-28-6. Magnolia Petroleum Co. has spudded No. 2, NE cor. SW SE NE, Section 4-28-6.

Marion County

Cameron Brothers are shut down in their No. 1 Calbeck, NE cor. SW SW SW, Section 1-22-3.

Greenwood County

Greenland Oil Co. has abandoned as dry at 2,760 feet, its No. 1, NE cor. Lot 2, Section 31-23-8. Swartz and others have abandoned No. 1, NE cor. SW, Section 36-23-10. It was dry at 2,244 feet.

Cowley County

Phillips Petroleum Co.'s No. 25, NW cor. SW NE SE, Section 17-35-7, sand at 2,693-2-729 feet and total depth at 2,742 feet, was shot with 70 quarts and made 10 bbls. The same company's No. 26, SW cor. NE SE SE, Section 17-35-7, sand 2,015-63 feet, was shot with 150 quarts and made 70 bbls. The same company's No. 27, NE cor. SW NE SE, Section 17-35-7, has been abandoned. It was dry at 2,745 feet.

Sumner County

Champlin Refining Co. has a location for No. 1, NE cor. SW SW SE, Section 4-30-1w. The same company has a rig on the ground for No. 1 LeForce, NW cor. NE SE SE, Section 9-30-1w. Broadhurst's No. 1, CNL S half NW, Section 13-35-2w, has been abandoned as dry at 4,280 feet.

Shawnee County

Sandy Holl and others have abandoned as dry at 2,006 feet, their No. 1, SE cor. NW, Section 36-11-13.

Morris County

C. A. Nichol has a 425,000-foot gasser in No. 1 Corey, NE cor. NW, Section 5-17-7. Sand is at 665-80 feet. C. A. Nichol also has a 75,000-foot gasser in No. 1 Manguel, SW cor. SE, Section 6-17-7.

Franklin County

Lambert Oil & Gas Co. has abandoned as dry at 1,497 feet, its No. 1, CSL S half SW, Section 22-16-21.

McPherson County

E. B. Merriam has completed No. 1 C SW, Section 29-18-2w, as a 7,000,000-foot gasser. Sand was 2,915-46 feet.

Barton County

Rankin and others are fishing for tools at 680 feet in their No. 1 C SE SE, Section 28-18-12w.

Rice County

Phillips Petroleum Co. has spudded No. 2, SE cor. NW SE NW, Section 35-20-6w.

Reno County

Mississippi Valley Oil Co. has abandoned its No. 1, C NE, Section 36-24-7w. It was dry at 4,092 feet. Cassoday's No. 1, C SE, Section 9-25-7w, also has been abandoned as dry at 4,012 feet.

Kingman County

Fleeger's No. 1, SW cor. NE NE NE, Section 13-28-7w, has been shut down at 4,001 feet. Cassoday's No. 1, C SE, Section 35-28-7w, has been abandoned as dry at 4,470 feet.

Pratt County

Rowland and others have abandoned their location for No. 1, SW cor. NE NW NE, Section 27-30-14w.

Woodson County

Altinite Oil Co.'s No. 1, NW cor. SW SW, Section 35-25-13, has been abandoned as dry at 1,531 feet. Prairie Oil & Gas Co.'s No. 11, NW cor SW NW, Section 29-23-14, sand 1,659-80 feet, shot with 120 quarts, made 25 bbls. Pure Oil Co.'s No. 11, SE cor. NE SE NW, Section 6-24-14, sand 1,721-36 feet, shot with 80 quarts, made 30 bbls. J. L. Stover Drilling Co.'s No. 1, SE cor. NE NE, Section 33-25-14, has been abandoned as dry at 1,702 feet.

Russell County

Midwest Oil Co. has spudded No. 22 Booth, NW cor. SW NW, Section 32-11-15w. Kittle & Shumaker are drilling at 975 feet in No. 1, SE cor. NE NW NW, Section 6-14-12w. Ralph Day & Keys have a location for No. 1, SE cor. NW NW NE, Section 8-14-15w. Kittle & Shumaker have abandoned as dry at 3,604 feet their No. 1, SW cor. NE, Section 6-14-12w.

Modern Methods at Muskogee Plant

New Developments in Skimming and Cracking Installations at Pure Oil Co. Plant. Make Cylinder Stocks Continuously

By Neil Williams

Completing an extensive building program at its Muskogee refinery, the Pure Oil Co., has the newest and one of the most up to date plants in the Mid-Continent, marking another milestone in one of Oklahoma's pioneer refineries. Although as much old equipment as possible, including some from the dismantled Cushing plant, has been used in the construction, the company virtually has rebuilt the entire refinery, embodying the latest principles in new equipment of its own design and setting innovations in Mid-Continent refining operations.

The plant represents some new ideas in refining equipment and processes as well as development and putting into operation to the last degree methods of heat conservation and fuel economy. The entire refinery has been remodeled to obtain the most efficient results from a minimum of equipment and operation.

In this connection it might be mentioned that the rebuilding of the Muskogee refinery was only a part of the general construction program being carried on by the Pure Oil Co., in which similar principles and methods are being put into each plant. The Marcus Hook, Pa., plant only recently has been rebuilt, and those at Heath, Ohio, and Cabin Creek, W. Va., have been enlarged. Improvements also are under way at Ardmore, Okla.

General additions at the Muskogee refinery include two Cross cracking units but with a special installation with towers, vaporizers and heat exchangers of the Pure Oil Co. design, a tube still and tower on the crude battery, vapor line heat exchangers, new lubricant and filtration plant equipment, blending tanks and chilling equipment at the grease compounding plant, a gas recovery system and miscellaneous improvements.

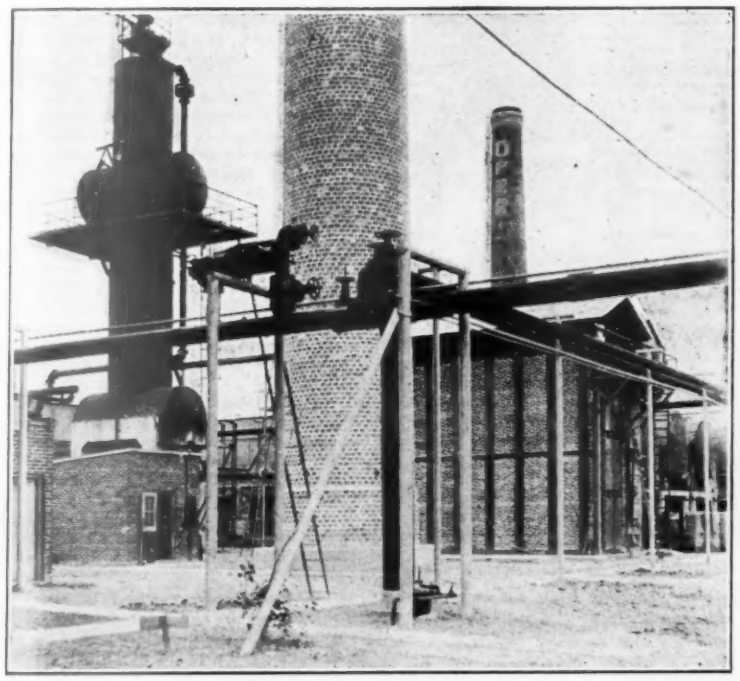
Car Repair Shops Built

Incidental to the refinery, although important among additions to the plant, has been the establishment of a car repair shop to take care of all the company's cars west of the Mississippi River. Formerly, the company maintained only one shop, that at Heath, Ohio. When completed, the shop will have trackage for 50 cars.

Something entirely new for Mid-Continent refiners is the continuous process for the manufacture of cylinder stocks now in operation at the Muskogee plant. The batch method, known to all refiners, has been thought to be the only process by which a uniform and desirable stock could be obtained. The continuous process has been considered impractical because of the possibilities of scorching the charge with too uncertain temperatures and pressures.

The Pure Oil Co. has overcome these difficulties and has the first successful continuous lubricating oil process in the Mid-Continent, so far as is known. This is being done, of course, only by maintaining of a constant flow of the charging stock from one still to another, and especially into the last still, from which the finished cylinder stock is pumped, and by regulating closely the temperature and steam in the last still.

The manufacture of cylinder stock from this continuous process can be shown best by a brief description of operations preceding this point. The crude battery system consists of the new pipe still and six shell stills. The plant has six other shell stills but these serve only for rerunning purposes.



A new tube still (right) and the 85-foot tower (left) which operates off the still at Muskogee, Okla., refinery of Pure Oil Co.

Pipe Still Is Installed

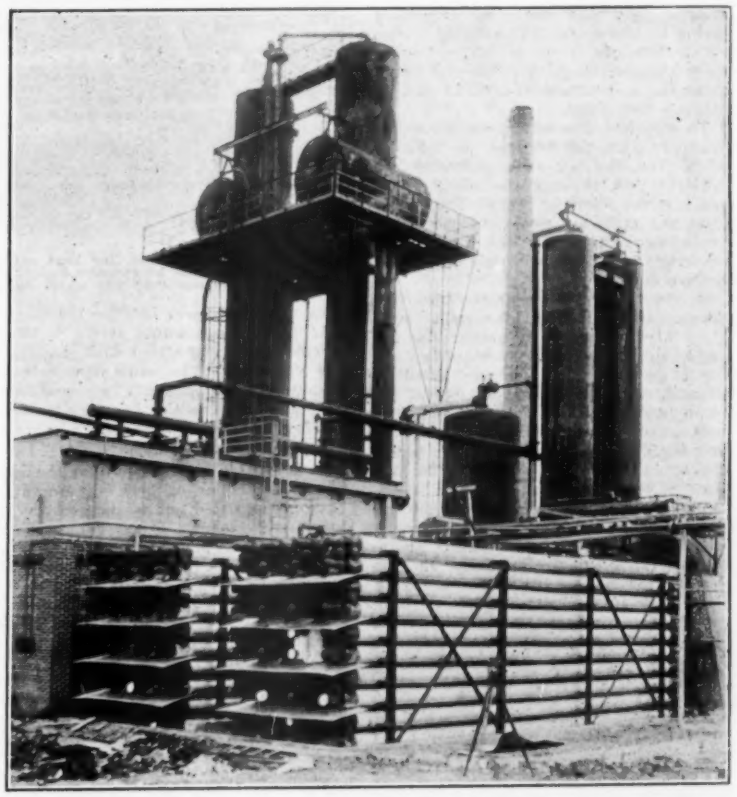
The pipe still is of the company's own design as is the tower which operates off it. It is constructed similar to other such stills but has a capacity of more than 5,000 bbls. daily and by stripping all gasoline and naphtha from the crude is doing what four shell stills formerly did, and at that figure has doubled the crude capacity of the entire plant.

The shell stills are of the ordinary type, the first two being 30 feet long and 10 feet in diameter and the remainder 40 feet long and 10 feet in diameter. They were a part of the old plant and the pipe still was built to take the first load off the crude.

Before going further, it might be well to mention the tower which operates off the tube still. This tower, which also is of the company's own design and something new in this type of equipment, is the only one on the entire system but two similar ones are running at the cracking stills.

The tower is of a combination baffle and bubble type and operates similar to the old type alcohol still. Being 85 feet high and 12 feet in diameter, it is believed to be the largest in the Southwest. Near the top in a horizontal barrel, as shown in an accompanying picture, is a coil, over which the hot oil and vapors drop and through which the cold crude being pumped into the tube still passes.

It is by pumping the cold oil through this coil and through the vapor line heat exchangers to be described later that the temperature of the charging stock is boosted to nearly 400 degrees before it enters the tube still. Passing through the long series of pipes in this still, the oil is raised in temperature to about 510 to 520 degrees and then is passed off into the top of the tower where the gasoline and naphtha ends vaporize as the hot oil drops down over the coils and through the baffling and bubble plates. At the bottom of the tower is a horizontal receptacle into which the oil which does not vaporize collects before going into the first shell still.



View of new equipment built by Pure Oil Co. to supplement Cross cracking unit installation. In the foreground are the special heat exchangers. At the extreme right is the pressure distillate rerun still operated without firing. Just left of the center are two fractionating towers for the two cracking units.

Vapors given off in the tower pass off through the top, go through the vapor line heat exchangers helping to preheat the raw crude entering the system, then through the coils in the condenser boxes, and come out a finished gasoline of U. S. Motor specifications except for sweetening. This one operation strips all gasoline and naphtha ends, and the remaining oil, called topped crude, which has dropped into the receptacle in the bottom of the tower, then is run to the first shell still.

Constant Flow Made Certain

Here the Pure Oil Co. has taken a step to insure a consant flow of charging stock through the system and to prevent any backing up of oil in the tower. On the flow line where the topped crude leaves the receptacle at the bottom of the tower is an automatic valve called the vigilant regulator. The regulator works by means of a float and when the oil level in the tower becomes too low a valve closes, shutting off the flow of oil to the shell still and allowing it to accumulate in the tower.

On the other hand, when the oil level becomes too high the regulator opens the valve and lets more oil into the shell still. Were it not for this regulator an under or an over supply of oil might exist in the bottom of the tower which would throw the vapors leaving the top off specifications and color. It also can be seen that by maintaining a constant oil level in the bottom of the tower a steady flow to the stills is assured.

Temperature in the top of the tower is kept constant by another automatic valve which regulates the amount of cold oil to be circulated through the coil in the top of the tower. If the temperature raises the valve opens letting more cold oil through the coil and if the temperature begins to drop the flow is slackened.

The topped crude, which runs about 28 gravity, from the tube still and tower then passes on to the first shell still and through the continuous system as in other refineries. Kerosene cuts are taken from the first two stills, gas oil from the third, a light wax distillate from the fourth, a medium wax distillate from the fifth, and at the sixth, or last, still a heavy, dark

wax distillate is cut leaving the bottoms to be pumped out as a 600 fire test steam refined cylinder stock.

Close Watch Is Required

This describes in brief the operations except the actual refining of the cylinder stock, but, as mentioned, there is nothing very involved about this in the continuous process except the necessity of maintaining a constant flow and by keeping a close watch on temperatures and pressures. An even temperature of 685 degrees Fahrenheit is kept in the cylinder stock still. To get a steam refined product, the steam is injected directly into the stream. This steam is kept at a pressure of 2 pounds. The still, as is the case with the entire system, is operated under a pressure of 18 pounds.

Of particular interest is the method of maintaining a constant and steady flow of the stream from one still to another and especially into the sixth still. The principle is not entirely new as it already is in use at a few refineries. This steady flow is assured by steam pressure, the steam being injected through a jet in the flow line between each still.

The amount of steam necessary to maintain a steady flow is regulated by an automatic valve which opens if the flow begins to back up in any still. In a simple process, the flow from one still to another is by gravity and if temperatures are not correct there is a back pressure on the oil line. This is overcome by steam pressure which is important in the refining of cylinder stock by the continuous process.

Exhaust Steam Cuts Fuel Cost

In connection with this all the steam used in this system and also that injected into the cylinder stock still is exhaust steam from various parts of the plant. Use of the exhaust steam in place of live steam has meant an important saving in fuel costs. The exhaust steam, which formerly went to waste, serves every purpose along this line and eliminates the cost of equipment and fuel to generate live steam.

To complete this continuous process, a pump draws the bottoms, or cylinder stock, from the last still, maintaining a constant flow through the cooling coils and into the receiving tanks. The vapors from the still are condensed making a heavy wax distillate which is used as cracking stock along with gas oil for the Cross units.

In the process, kerosene streams from the first two stills are run together making a 41-43 water white grade. The gas oil is run into cracking stock storage and the light and medium wax distillate streams, after being rerun in two of the rerun battery stills to take off any lighter ends which might have gone over in the first distillation, pass to the wax plant, the operation from here on being the same as at other wax plants.

Of especial interest at the plant are the new vapor line heat exchangers, which serve not only to preheat the incoming crude charge but also as condensers for the vapors from the stills, thus reducing the use of water as cooling medium to the minimum. By use of these exchangers, although the crude capacity of the plant has been doubled, the water requirements have been increased only about 25 per cent.

These heat exchangers, of which there are four, are of the company's own design. Each consists of a horizontal, cylindrical shell 21 feet long and 20 inches in diameter filled with 100 1-inch tubes through which the hot vapors pass. The incoming raw oil is pumped through the shell around the tubes, and, in this operation the temperature of the oil is raised about 250 degrees.

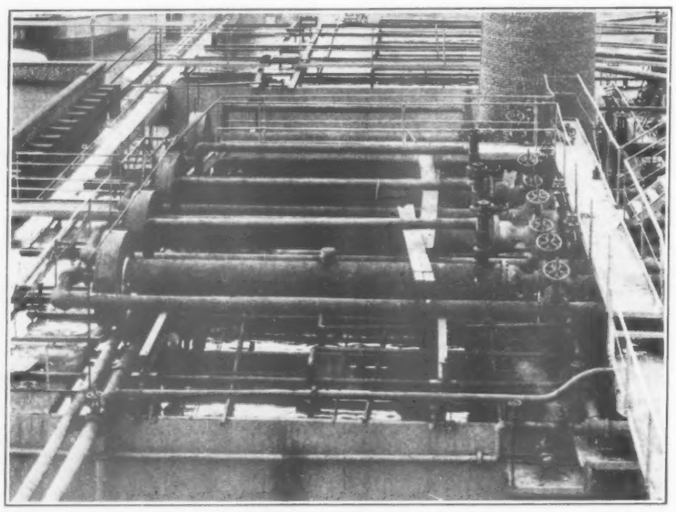
At the end of the shell and at the exit of the vapor lines is another cylindrical chamber about twice the diameter of the heat exchanging shell. Into this receptacle the vapors collect and expand and due to the lower temperature here a certain part of the vapors condense and are taken off through a line from the lower part of the chamber. As much as 65 per cent of the vapors have been condensed in this way without going through the water condenser. Another line at the top carries off the remaining vapors which are condensed into liquid in the usual way.

Water Needs at Minimum

Water requirements for condensing purposes have been reduced to a minimum not only by this process but also by a triple use of the water taken into the system. This latter plan is unique with the Muskogee plant and has proved highly efficient. Instead of using fresh water in each of the condenser boxes, the boxes are constructed and arranged in such a way that the same water is used three different times by flowing from one condenser to another.

The condenser boxes have an overflow opening which is connected with the next box by a trough. Water is pumped continually into the first box, condensing the gasoline vapors, overflows through a trough into the kerosene condensing boxes, and again into a third condensing box. This saving of water has proved an important feature at this plant.

The cracking installation also presents several new ideas in pressure distillation and in the special hook-up of two Cross stills with equipment of Pure Oil Co. design a finished gasoline of U. S. Motor specifications is produced with practically one operation. The stills and reaction chambers are standard Cross equipment but the Pure Oil Co. has supplemented the installation with its own vaporizers, towers and heat exchangers.



View of four new vapor line heat exchangers which also serve to condense approximately 65 per cent of gasoline vapors without use of water. The picture also shows the troughs connecting the water condenser boxes, enabling triple use of all water.

It is in this installation that the company's principles of heat conservation have been carried out to the greatest extent, and, included is a still, used for rerunning the pressure distillate, which is operated entirely without a fire by using heat from the already hot oils.

Pure Equipment at Cross Units

The Cross process is familiar to the industry but because of the different Pure Oil Co. equipment used with the stills, a description of the complete operation is interesting. The two units are identical, each handling 2,000 bbls. daily, but they are run together with only one set of heat exchangers and one rerun still.

The charging stock, consisting of gas oil and the heavy wax distillates, first is pumped through the coils in the tops of the two towers where it is preheated to about 300 to 320 degrees by the hot vapors and oil which come in contact with the coils. The towers are similar both in design and size to the tube still tower previously described.

At this temperature, an electrically operated low pressure pump feeds the charging stock to a high pressure, steam operated Worthington hot oil pump which picks up the stock and forces it into the still against an operating pressure of from 600 to 700 pounds. Going through the preheater tubes at the base of the still the oil is raised in temperature to from 500 to 520 degrees and in the cracking tubes in the top of the still it is raised to from 900 to 910 degrees without vaporizing. The hot oil then is driven into the reaction chamber where cracking takes place and the velocity of the oil reduced. It is here that the carbon, always a product of cracking, is deposited.

Up to this point the process is identical with regular Cross units, but from here on, although the general Cross principles are carried out, the Pure Oil Co. equipment makes some important changes and new ideas in heat transference are put into operation.

The hot oil passes comparatively slowly through the reaction chamber and is released through control valves into the reboiler coils. In this operation the temperature of the oil is reduced to from 650 to 700 degrees. The reboiler in this installation consists of a series of coils and is located in a 250-bbl. rerun still which handles the pressure distillate from the units.

Still Uses No Fire

It is this still which is one of the most interesting pieces of equipment at the plant as the placing of these reboiler coils in this still makes it possible to rerun all the pressure distillate without the use of fire, thus saving fuel for one complete still. A little steam is used at times to insure certain temperatures but ordinarily this hot oil in the coils furnishes all the heat in the still. In regular Cross installations the reboiler coil is at the base of the tower.

Passing through the reboiler coil the oil is allowed to enter the special vaporizer, a small tower, where the oil expands freely. Here certain condensation takes place, the lighter portions containing gasoline being directed into the main tower while the condensed bottoms are drawn out as fuel oil.

The overhead vapors then enter the large towers where more fractionation takes place by means of the baffling, bubble plates and the coils through which the cold charging stock is being pumped. The desired ends regulated by temperature controls pass off the top of the tower, go through the condensing and cooling coils, and as pressure distillate with a certain amount of fixed gases are directed to the separators from where the pressure distillate is drawn off into storage.

The undesired ends are refluxed into the receiving chamber in the bottom of the tower and then comprise stock to be recycled through the system.

Heat Exchanger Is Feature

At this point another feature has been added to the equipment in the form of a special heat exchanger designed by the Pure Oil Co. This exchanger consists of 3-inch tubing within 6⅝-inch pipes arranged in coils 40 feet long, 10 layers high and 4 wide. The exchanger was provided to utilize the heat in the recycle stock from the tower to preheat the pressure distillate to be rerun.

In this operation, the recycle stock enters the exchanger at the top flowing downward between the tubing and the pipe shell while the pressure distillate, after being given an acid treatment, is pumped into the exchanger at the bottom through the tubing. The recycle stock enters at a temperature of 525 degrees, and, in losing its heat, preheats the incoming presure distillate to approximately 380 degrees before it enters the rerun still.

This still is the one previously mentioned as being heated by the reboiler coil. In rerunning the pressure distillate between 95 and 97 per cent is recovered as gasoline of U. S. Motor specifications, this being run to the sweeteners together with the gasoline cut from the tube still in the first operation. The remainder of the pressure distillate is recycled through the Cross system.

Treating the presure distillate, and also all the finished gasoline, is by the simplest of continuous treating processes. However, the equipment and the treating plant are a part of the construction just completed at the refinery.

In treating the pressure distillate, it is pumped through eight 1¾-inch orifice spools, where it is thoroughly mixed with acid, and then through two settling tanks. From the second settling tank, the pressure distillate is pumped through three more 2⅛-inch orifice spools where water is mixed into the stream. In going through the next two settling tanks, the water is separated and the pressure distillate again is pumped through eight 2-inch spools where it received the plumbite solution, which settles out in the remaining two settling towers. The operation from the cracking towers, through the treating plant, back to the rerun still and then to storage is continuous. The tanks are 20 feet high and 5 feet in diameter.

All gasoline receives the sweetening treatment which is accomplished by washing it with sodium hydroxide which settles out as the mixture passes through four other settling tanks. Interesting at the plant is the fact that these four tanks were improvised from tanks of four tank cars. These tanks, however, will be replaced with new tanks as soon as possible.

Gas Recovery Plant Is New

Included in the improvements at the refinery was the installation of a compression gas recovery plant, which at present is turning out about 4,500 gallons of gasoline daily. As previously mentioned, the pressure distillate together with the fixed gases from the cracking plant is pumped to this plant, being received into two cylindrical separator tanks. In these tanks the gases escape from the liquid and pass out the top and into the Ingersoll-Rand compressor at the rate of 500 feet a minute. The pressure distillate is drawn off the bottom.

As in the fractionating towers, vigilant control valves have been provided to regulate the amount of liquid kept in the tank and to maintain an even pressure at all times.

In the manufacture of bright stock from the cylinder stock produced in the continuous process, the Muskogee refinery has displaced its cold settling process and has installed six Sharples centrifugal separators. This process is practically identical with other plants making bright stocks and needs little explanation. The cylinder stock is blended 50-50 with naphtha, treated and filtered through a percolation process using fullers earth, chilled and then run through the centrifugal pumps which separate the heavy petrolatum from the desired bright stock product. The heavy residue is used for cracking stock while the bright stock charge is rerun to extract the naphtha and then is blown with air.

A complete new filtration plant, including new chilling tanks, blenders and other equipment, has been provided as a part of the general improvements at the plant. Also, as mentioned, new equipment has been added to the grease plant which has doubled the capacity of the plant, which now is turning out 350,000

pounds of greases and compounded lubricating oils monthly.

Mentionable about the plant is the fact that oil furnishes practically the only source of fuel for the complete operations. Residue gas from the gas recovery plant is used some in two stills but otherwise fuel oil is used. Production of fuel oil has been minimized at the plant but so far there has been sufficient supply for the operations. Four Springfield 323 horse power boilers generate the steam for the refinery.

ROCKY MOUNTAIN AREA

(Continued from Page 54)

feet, and the Wyoming Associated Oil Co. will have another of the same kind on Section 35-40-79 in the Lakota sand at 2,382 feet.

The McPherrin interests in the La-Barge Field have a gas flow at 1,040 feet that will make about 6,000,000 feet daily and is expected to make enough gas to supply the drilling wells in the fie'd with fuel and thus cut the amount of fuel oil used to a minimum.

The new pipe'ine being laid from the Lost Soldier Field to Parco was tested with gas over the stretch where 8-inch pipe is being used and the test proved satisfactory. This finishes about 16 miles of the line as soon as it is covered. The line is laid for 27 miles but is not tested to that distance.

RUNS FROM THE FIELD

Salt Creek	44,230
Teapot	1,020
Big Muddy	3,270
Grass Creek	3,690
Elk Basin	760
Greybull	20
Rock River	3,000
Rex Lake	270
Lance Creek	980
LaBarge	160
Poison Spider	710
Osage	330
Lander	390
Byron	70
Pilot Butte	50
Lost Soldier	5,370
Ferris	80
Simpson Ridge	120
Cat Creek	2,500
Lake Basin	270
Sunburst	15,680
Florence	450
Moffat	2,800
Tow Creek	610
Fort Collins	3,400
Boulder	25
Rangeley	100
Hogback	810
Rattlesnake	1,020
Table Mesa	230
Artesia	3,000
Total	94,815

TEXAS PANHANDLE

(Continued from Page 40)

Texas Company's No. 2 C. R. Garner and others, 330 feet north and west SE cor. NE, Section 106, Block 4, I. & G. N. Survey; No. 1 C. A. Noel, C NW, Section 26, Block 4, same survey; No. 1 J. L. Noel, 330 feet north and east SW cor. NW, Section 187, Block 3, same survey. M. & M. Drilling Co.'s No. 1 C. F. Moore, C NE, Section 10, Block 5, H. & G. N. Survey, location. F. Kappenberger's No. 1 E. F. Bryan, 330 feet each way SW cor. NW NW, Section 107, Block 4. Roxana Petroleum Corp.'s No. 2 E. F. Bryan-B, 330 feet SW cor. NE SW, Section 107, Block 4; No. 2 E. F. Bryan-D, 330 feet NW cor. SE NW, Section 92, Block 4; No. 3 E. F. Bryan-D, SE cor. SE NW, Section 92, Block 4; No. 4 E. F. Bryan-A, 990 feet north and 330 feet east SW cor. NE, same section.

Castro County

Mystery Oil Co.'s No. 1 J. I. Crum, 330 feet north and west SE cor. NE, Section 333, Block M-6, Stone, Kyle & Kyle Survey.

Dallam County

Marland Oil Co. and others' No. 1 Capitol Syndicate, 990 feet from the west and north lines, Section 36, Block 18, Capitol Syndicate Land, rigging up.

Gray County

Prairie Oil & Gas Co.'s No. 6 Merten Brothers, 330 feet north and east SW cor. Section 81, Block 3, I. & G. N. Survey; No. 7, 330 feet south and east NW cor. Section 82, Block 3, same survey; No. 8 990 feet south and 330 feet east NW cor. Section 82, Block 3, same survey; No. 9, 990 feet north and 330 feet east SW cor. NW, Section 82, Block 3, same survey.

Hutchinson County

American Refining Co.'s No. 5 J. F. Weatherly, 330 feet south and 990 feet west NE cor. NW, Section 19, Block Y, M. & C. Survey. Derby Oil Co. and others' No. 1-A Johnson Brothers, 295 feet south and 330 feet west NE cor. SE NW, Section 22, Block Y. Devonian Oil Co.'s No. 2-A, Johnson Brothers, 330 feet north and east SW cor. north 80 acres, south 240 acres, Section 66, Block 46, H. & T. C. Survey. Dixon Creek Oil Co.'s No. 31 H. E. Smith and others, 260 feet south and 330 feet east NW cor. NW SE, Section 5, Block Y. Midwest Exploration Co.'s No. 1 Johnson Brothers-Barnum, 330 feet north and east SW cor. E half north 160 acres of Section 69, Block 46, H. & T. C. Survey. Minnehoma Oil Co.-Kistler's No. 2 Johnson Brothers, 330 feet south and east of NW cor. S half SW, Section 20, Block Y. Phillips Petroleum Co.'s No. 2 Johnson Brothers-Cruse, 330 feet south and east NW cor. west 40 acres, north 80 acres, south 480 acres, Section 69, Block 46, H. & T. C. Survey; No. 3, 330 feet south and west NE cor. west 40 acres of north 80 acres of south 480 acres of same section; No. 1 Johnson Brothers-Dave, 330 feet south and east SW cor., Section 70, Block 46, H. & T. C. Survey, and located in Dave Blaker Survey, No. 4; No. 4 Johnson Brothers-Easter, 1,661.4 feet south and 312 feet east NW cor. north 240 acres, south 400 acres of Section 69, Block 46, H. & T. C. Survey; No. 7 W. L. Kingsland, 330 feet south and 990 feet west NE cor. N half, Section 6, Block B-4, D. & S. E. Survey; No. 3 G. A. Whittenberg, 328 feet north and 1,327 feet west SE cor., Section 62, Block 46, H. & T. C. Survey; No. 11 J. A. Whittenberg-Elra, 330 feet south and 990 feet west SE cor. Section 70, Block 46, H. & T. C. Survey, and located in Mrs. E. T. Tumlinson Survey No. 3; No. 1 J. A. Whittenberg-Ruben, 290 feet south and 330 feet east NW cor. north 80 acres, south 320 acres of Section 67, Block 46, H. & T. C. Survey; No. 2, 330 feet south and 250 feet west NE cor. north 80 acres of south 320 acres, of the same survey. Phillips Petroleum and Pulaski Oil Co.'s No. 8 H. E. Smith and others, 330 feet north and west SE cor. of W half NE, Section 12, Block Y. Prairie Oil & Gas Co. and others' No. 39 Johnson Brothers-A, 1,002 feet north and 330 feet east of SW cor. NE, Section 22, Block Y; No. 7 Johnson Brothers-B, 990 feet south and 330 feet east of NW cor. south 160 acres of Section 69, Block 46, H. & T. C. Survey; No. 8, 990 feet north and 330 feet east SW cor. south 160 acres of same section; No. 9, 330 feet south and east NW cor. east 40 acres, north 80 acres, south 480 acres of same section; No. 10, 330 feet north and west SE cor. north 80 acres, south 400 acres of Section 68, Block 46, same survey. Skelly Oil Co.'s No. 5 Johnson Brothers-Cunningham, 370 feet south and 330 feet east NW cor. west 80 acres, south 120 acres of Section 4, Block B-4, D. & S. E. Survey. Spurlock and others' No. 1 J. F. Weatherly, 330 feet south and east NW cor. NW NE, Section 18, Block Y. The Texas Company's No. 1 C. R. Garner and others, C NW, Section 122, Block 4, I. & G. N. Survey. J. C. Ward's No. 1 Smith, NE cor. SE SW, Section 15, Block Y, rig. Traders Oil Co.'s No. 1 Johnson, NW cor., Section 1, Block X03, H. & O. B. Survey, location. Globe Oil & Refining Co.'s No. 1 J. Q. Bost, NW cor. NE, Section 9, Block Y-2, T. T. R. R. Survey, rig. Canadian River Oil Co.'s No. 1 Johnson, 150 feet from the north line and 165 feet from the west line of west 10 acres, NW NW, Section 22, Block Y, spudding. Mudge Oil Co.'s No. 1 E. Cockrell, SW cor., Section 9, Block B-3, D. & S. E. Survey, building rig, this is a north offset to J. A. Swinder & Son's No. 1 E. Cockrell. Marland Oil Co.'s No. 1 Cal Merchant, 1,750 feet south and 330 feet east of CWL, Section 37, Block 47, H. & T. C. Survey, but in Section 38, (west offset Big Creek).

Potter County

Greater Amarillo Petroleum Co.'s No. 1 Amarillo Townsite, 327 feet north and 328 feet east SW cor. Section 167, Block 2, A. B. & M. Survey.

Roberts County

Mercer & Dunber's No. 1 H. A. Gill, 330 feet south and west of NE cor. Section 127, Block M-2, B. S. & F. Survey.

DAILY AVERAGE PRODUCTION OF THE AMARILLO DISTRICT
Week Ending November 7, 1926
Hutchinson County

Company—	Wells	Daily Average Last Week	This Week
Alaska Pet. Co.	1	30	40
Amerada Pet. Corp.	8	760	860
American Ref. Co.	3	590	590
Apex Oil Co.	2	300	275
Badger Oil Co.	2	60	190
R. G. Barnum	1	60	55
Buffalo Oil Co.	1	70	60
Canadian River Oil Co.	5	385	375
Julian Pet. Corp. (Canyon)	5	8,000	7,400
Center Dome Oil Co.	2	10	15
Centerfield Oil Co.	1	5	0
Coble-Whittenberg	4	800	790
Continental Oil Co.	1	10	5
Currie Bros. and J. R. Phillips	2	975	1,500
Cockrell & McIlroy	4	500	125
Delmar Oil Co.	1	60	45
Derby Oil Co.	4	1,155	1,150
Devonian Oil Co.	4	550	590
Dixon Creek Oil Co.	22	6,990	7,500
Double Five Oil Co.	1	65	60
Douglas Oil Co. and Cline	1	10	10
Douglas Oil Co.	1	15	15
E. J. Dunnigan	2	875	290
Southwestern O. & D. (was E. J. Dunnigan et al)	1	...	600
Echo Oil Co.	3	1,765	2,000
Empire Gas & Fuel Co.	8	3,865	3,600
Fly-Blackburn Oil Co.	2	335	270
Gates Oil Co.	4	405	400
Goldelline Oil Co.	3	250	250
Golding & Phillips	1	10	10
Gopher Oil Co.	1	20	15
Gulf Prod. and Panhandle Ref. Co.	38	6,955	7,580
Gulf Production Co.	29	7,820	7,360
L. R. Hagy	1	0	5
Heywood et al	2	80	50
J. K. Hughes Dev. Co.	15	2,830	2,850
Hoss, Currie & McKnight	3	400	525
W. H. Holmes	1	100	90
Hutchinson Co. Oil Co.	1	0	0
Dan A. Japhet	4	600	675
J. H. Lenix	1	15	20
Lenix & Patterson	2	285	0
Lucky 10 Oil Co.	3	740	315
Marland Oil Co.	44	14,310	12,960
Midwest Exploration Co.	6	1,335	1,600
Minnehoma Oil Co. and Kistler	1	80	60
McMan Oil & Gas Co.	17	10,380	9,075
McIlroy & Herring	4	650	600
S. D. McIlroy	3	750	1,075
S. D. & W. W. McIlroy	7	1,100	800
McIlroy Bros. et al	3	450	450
J. H. Middleton	3	70	60
Murchison & Fain	2	600	550
Newby Oil Co.	2	80	75
New Domain Oil Co.	3	170	170
Pantex Oil Co. (Westex)	9	3,525	3,000
Phillips & Heywood	2	1,625	1,800
Panhandle Oil Co.	1	25	175
J. R. Phillips	1	20	10
J. R. Phillips et al	3	350	200
Phillips Petroleum Co.	87	32,240	32,465
Prairie Oil & Gas Co.	31	7,630	11,500
Relief Oil Co.	4	950	700
Henry Riley	1	230	225
Riley & Holmes	2	610	475
Roxana Pet. Corp.	8	1,360	1,240
Ryan Pet. Corp.	3	445	450
Skelly Oil Co.	14	6,470	8,000
Skiatex Oil Co.	4	900	620
J. L. Smith	2	60	90
Smith & Byrum	2	275	265
Spring Creek Oil Co.	5	510	650
Summit Oil Co.	2	300	270
Sunny Jim Oil Co.	5	600	525
Sunburst Oil Co.	2	1,300	1,000
Sunrise Oil Co.	1	100	...
J. A. Swindler & Son	1	15	10
Travelers Oil Co.	2	580	600
Triangle Oil Co.	2	3,000	2,100
J. D. Ward	1	50	40
J. D. Ward et al	1	45	...
White Eagle Oil & Ref. Co	17	3,180	3,000
J. O. Whittington	1	...	...
Total Hutchinson Co.	509	145,020	145,440
Average per well		287	281
Carson County			
Amarillo Oil Co.	1	...	...
American Refining Co.	7	515	500
Empire Gas & Fuel Co.	1	30	35
Gates Oil Corp.	1	5	10
Gulf Prod. Co.	17	350	475
Marland Oil Co.	12	1,575	1,550
Republic Prod. Co.	1	140	75
Roxana Petroleum Corp.	1	240	200
W. W. Silk et al	3	150	120
Skelly Oil Co.	2	95	80
Sunny Jim Oil Co.	2	40	30
The Texas Company	11	250	325
Total Carson Co.	59	3,390	3,400
Average per well		59	60
Gray County			
Empire Gas & Fuel Co.	2	...	60
Gulf Prod. Co.	7	2,050	1,900
Magnolia Petroleum Co.	8	150	315
McMan Oil & Gas Co.	6	500	740
Phillips Pet. Co.	2	300	265
Prairie Oil & Gas Co.	3	835	810
Pure Oil Co.	1	40	40
Roxana Petroleum Corp.	1	...	60
The Texas Company	1	10	...
Wilcox-Pampa Oil Co.	12	4,900	4,800
Young et al	1	90	35
Total Gray County	44	8,875	9,025
Average per well		269	205
Potter County			
Amarillo Oil Co.	1	20	35
Wheeler County			
Gibson Oil Corp.	2	135	130
Continental Oil Co.	2	160	160
Mid-Kansas Oil & Gas Co.	1	30	25
Midwest Exploration Co.	3	15	20
Total Wheeler County.	8	340	335
Average per well		42	42
Grand Total Panhandle.	605	157,645	158,235
Average per well		260	262
Grand total 4 wks. ago.	509		140,495
Av. per well 4 wks. ago			276

PREPARING FOR BIG BUSINESS IN SEMINOLE

(Continued from Page 29)

screwed line from the field to Henryetta with stations in the field near Okemah. Dean Straight line pumps driven by 100-h.p. electric motors will furnish the power. The line is expected to handle 6,000 bbls. a day of crude. It will be supplemented by additional lines if the conditions warrant.

The Ozark Pipe Line Co. will have a capacity of 7,000 bbls. a day through its 4-inch line from Seminole to Cromwell when its line now building is finished. The work should be completed in a short time but the company would not put a definite date on when it would begin running oil. It will be a screw-joint line. Diesel engines and Worthington pumps will be used.

The Barnsdall Oil Corp.'s pipeline from Seminole to Okmulgee is now under course of construction. Three gangs are at work and the pipe is on the ground. It will be a 6-inch screwed line, 50 miles in length with pump stations at Seminole and at Okemah. The company will be able to handle 15,000 bb's. a day through this line and with good luck expects to be able to begin shipping crude by December 10. Gould and National Transit pumps will be used, driven by Superior and Fairbanks & Morse Diesel engines.

The Cosden Pipe Line Co. (Mid-Continent Petroleum Corp.) will lay a 6-inch line from a point near Cromwell to Seminole Field. It will be 30 miles long. Gaso pumps driven by electric motors will be installed. The line will have a capacity of 8,000 bbls. a day.

AUTO REGISTRATION TO REACH 40,000,000

CHICAGO, Nov. 8.—Automobile ownership in the United States can reach the 40,000,000-mark without danger of saturation in the industry, H. F. Kingsley of Chicago, declared today at the automotive equipment show.

"Registration of cars has doubled in the past five years," said Mr. Kingsley, "yet in 1921 experts talked of the approaching saturation point. Five years ago, automobiles in America numbered 10,500,000. Today they total more than 20,000,000. Future rate of increase will not be so rapid because of growing replacement requirements, but the 40,000,000-car mark will be reached easily within 15 years.

"There are more prospective automobile owners in the country at present than there are cars registered. National income is increasing at the rate of $2,000,000,000 a year, income tax statistics show. Wages in the steel and iron industry have risen 140 per cent since 1914, while in the automobile industry, they have jumped 122 per cent. Yet, the actual selling price of cars is 29 per cent lower than it was 12 years ago."

COLONEL HUMPHREYS RECOVERS

HOUSTON, Tex., Nov. 9.—Col. E. A. Humphreys, who has been in a hospital here with pneumonia, is reported out of danger and improving.

TOO LATE TO CLASSIFY

FOR SALE
Two 125-H.P. Gas Engines.
Two 100-H.P. Gas Engines.
Direct connected to D. C. Generators, complete with switchboards, starter tanks and pump.
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PEDIGREED Silver Persian cats for sale, fine for pets. Make nice Christmas presents. L. Blosser, Wayside, Kans.

CRANE COUNTY, TEXAS
I own 320 acres the southeasterly half of Sec. 1, Blk. 6, H. & T. C. Ry. Sur., about 3 miles west of Marland's No. 1 D. Hughes, now reported making 1,200 bbls. daily, other well drilling closer. Will lease all or part, make offer. C. B. Garnett, 1131 Columbine St., Denver, Colo.

REFINING AND MARKETING

MONTANA REFINERIES SCRAMBLING FOR OIL

CASPER, Wyo., Nov. 6.—The production of oil in the Sunburst Field in Montana is occasioning much sober reflection among the refiners who have signed contracts for the delivery of products in large quantities. The falling off in the crude production recently has shown both the refiners and those depending upon their products what may be expected if Sunburst does not keep up to the rated figure of about 20,000 bbls. daily.

The Ohio Oil Co. is probably the largest purchaser of crude in the field, besides having considerable production of its own, but the total purchases of other companies is probably larger than the Ohio's and the so-called independent concerns have made contracts to supply oil products at a period when the field was producing at its high point and now find the production has dropped to where there is not enough production daily to take care of these contracts. The result is a wild scramble for crude and at present the premium is about 25 cents per barrel.

During large production, the Great Northern Railroad made contracts with refiners for fuel oil and changed its locomotives from coal to oil on the strength of these long term contracts. Now the production of leases that have been furnishing the crude for the refining plants has reached a point where there is not sufficient oil to permit the refineries to run at capacity, the railroad is feeling a shortage of fuel oil and is demanding a larger supply from the refiners, while the refiners are boosting the premiums in an effort to obtain more crude.

Some producers signed contracts for their production at the prevailing market prices last summer and are now watching their neighbors who did not sign such contracts obtain 25 cents per barrel more.

The Great Northern Railroad went to great expense and trouble to change from coal to fuel oil and established many stations along its lines for storage of fuel oil. Some of the coal mines operated by the railroad have been closed down on account of there being no demand for coal after the locomotives started to use fuel oil.

U. S. SHIPPING BOARD ASKS BIDS ON OIL NEEDS

Bids have been asked by the government to supply the United States Shipping Board Emergency Fleet Corp. with lubricating oils, kerosene and gasoline for either a 6-month period or an alternative 12-month period beginning December 1, 1926. The bids will be opened on the afternoon of November 18, 1926. No definite amount of material will be purchased, the seller being required to furnish oils, kerosene and gasoline only as needed.

Requirements for the shipping board fleet will include steam cylinder oil, superheat cylinder oil, ice machine cylinder oil, marine engine oil for forced feed turbines, electro-generators and motors, medium and heavy oil for forced feed and turbine reduction geers, kerosene for illuminating oil and gasoline for motor boats and similar engines.

Gasoline and kerosene bids have been asked both on a fixed price basis and also on a basis of a given differential below the tankwagon price.

MARKETING PARTNERSHIP

OIL CITY, Pa., Nov. 8.—R. P. Byles and W. E. Weidler have formed a partnership here to engage in commission marketing of petroleum products with offices here. Mr. Byles for six years has been purchasing agent for the Galena Signal Oil Co., and the 12 years before he was with the Independent Refining Co. Mr. Weidler until recently was manager of the Elk Refining Co. of Charleston, W. Va. He also has had experience in the export department of the Standard Oil Co. both in New York and in the Far East. After the war he was a captain in the quartermaster's department, buying all the gasoline and kerosene used by the army. He was president of the West Virginia Oil Marketers Association in 1924 and a member of the board of governors of the International Oil Exposition at Tulsa in 1924.

PROGRAM OF CONFERENCE ON GASOLINE TAXATION

An extensive program has been arranged for the national conference of gasoline tax administrators and oil inspectors to be held at Hotel Statler, St. Louis, Mo., on November 11, 12 and 13. The program will deal not only with tax and inspection problems but also with gasoline and kerosene specifications and refining methods. Subjects to be discussed at the conference and speakers are:

"State Inspection," James Duce, Colorado state inspector of oils.

"State Interest in the Petroleum Industry," W. J. Armstrong, Oklahoma state inspector of oils.

"The Meaning of Specifications for Gasoline and Kerosene," A. J. Kraemer, Bureau of Mines and Federal Specifications Board, Washington, D. C.

"Gasoline Specifications in Relation to Methods of Refining and Treating," Dr. Roy Cross, Kansas City Testing Laboratories.

"A Model Gasoline Tax Law," Edward Martin, auditor general of Pennsylvania.

"Securing Compliance," T. W. Bass, chief of the Nebraska gasoline tax division.

"Future Developments of the Gasoline Tax," Solomon Levitan, state treasurer of Wisconsin.

"Administration of Gasoline Tax Laws," W. S. Booton, director of excise tax of Tennessee.

"Administration of Gasoline Tax Laws from Viewpoint of the Distributor," Frank E. Packard, tax attorney, Standard Oil Co. of Indiana, Chicago.

"Constitutional Phases of the Gasoline Tax Law," North T. Gentry, attorney general of Missouri.

In addition to these speakers, Governor Sam A. Baker of Missouri and Governor M. E. Trapp of Oklahoma will be on the program. Governor Baker will be toastmaster at the conference banquet on the evening of November 12. William A. McAtee, Missouri state inspector, will preside at the sessions.

NEW RICHFIELD COMPANY

Organization of a new Richfield Oil Co. to operate the properties of the consolidated United Oil Co., Richfield Oil Co. and a number of smaller companies has been completed with the selection of officers. J. A. Talbot is president; C. M. Fuller, J. M. McKeon and J. F. Wallace, vice presidents; C A. Madary, secretary; R. W. McKee, assistant secretary and comptroller; S. P. Lyons, assistant secretary and auditor, and E. R. Taylor, assistant secretary.

TAX FREE "TOPS"

CHATHAM, Ont., Nov. 8.—Arctic Refineries, Ltd., of Lethbridge, Alta., has made application to the tariff advisory board at Ottawa for admission into Canada free of duty of oil "tops" for refining purposes. The matter was taken under advisement for submission of all data to the minister of finance.

SCHEDULES CANCELLED SUBJECT TO REFILING

WASHINGTON, Nov. 6.—The Interstate Commerce Commission today decided on the complaint filed by the Fort Worth Chamber of Commerce freight bureau and North Texas Petroleum Traffic Bureau protesting new schedules filed on shipments of oil from north Texas points to Mississippi River crossings. In the main the new tariffs are found justified, but they are ordered cancelled without prejudice to their refiling in accordance with the finding.

The extending rate from Wichita Falls, Fort Worth and other producing points in north Texas to Vicksburg and Natchez is 22.5 cents, and the railroads propose to increase this to 32 cents for Wichita Falls and 29.5 for Fort Worth, while the rate from Houston will be 24 cents.

The existing rate is declared to be inadequate and not on a parity with like rate ordered in the recent decision covering oil shipments from the Mid-Continent Field. In that direction crude oil was given preferential of 80 per cent of the rate on gasoline and a similar requirement is ordered in this case.

It was to issue new tariffs in conformity with this decision that the proposed schedules, which have been suspended since last May, were ordered cancelled.

I. P. M. A. DIRECTORS FOR MIDDLE ATLANTIC

Thirteen jobbers have been selected as members of the board of directors of the newly organized jobber association to be known as the Independent Petroleum Marketers Association of the Middle Atlantic States. Officers of the new association were selected at the recent meeting of the National Petroleum Marketers Association which held its annual meeting at Atlantic City, N. J.

Following are the directors of the association: Clarence Shock, Shock Independent Oil Co., Mt. Joy, Pa.; Claude Hearn, Hearn Oil Co., Wilmington, Del.; John W. Sherwood, Sherwood Brothers, Baltimore, Md.; M. H. Levinson, Peerless Oil Co., Scranton, Pa.; Stanley Rusk, Rusk Oil Co., Philadelphia, Pa.; Harry Sherby, Mylex Oil Co., Washington, D. C.; J. Shlifer, Intercity Oil Co., Philadelphia, Pa.; T. H. Tripp, Lincoln Oil Co., Camden, N. J.; Paul Himmelfarb, Penn Oil Co., Washington, D. C.; R. C. Paul, Harrisburg Oil & Supply Co., Harrisburg, Pa.; C. R. Harned, C. R. Harned Oil Co., Allentown, Pa.; Mortimer Levy, Liberty Oil Co., Pottsville, Pa.; Paul F. Erdman, Subway Oil Co., Reading, Pa.

PHILLIPS PETROLEUM CO. BUYS 700 TANK CARS

Phillips Petroleum Co. of Bartlesville has placed an order through the Tulsa office of the Standard Tank Car Co. for 700 cars of 10,000 gallons capacity each. The cars will be equipped with steam heating coils and will be used exclusively in transporting crude from the Texas Panhandle oil field.

According to officials of the company, the Phillips Petroleum Co. is in need of this many cars to handle all the crude it will have to move from the Panhandle. Part of the crude will be applied on the company's contract with the Atlantic Refining Co. and the remainder will be shipped to the Burbank field and placed in storage which the company has there.

CALIFORNIA GASOLINE TAX

SACRAMENTO, Calif., Nov. 8.—Gasoline tax collections in California for the quarter ending September 30 totalled $4,849,307.63. This was an increase of $402,360.02, or 11 per cent, over the same quarter of 1925. The tax was assessed during the three months on the sale of 244,914,522 gallons of gasoline, the largest distribution reported since the state 2-cent levy went into effect in October, 1923.

OIL MEN'S CLUB HOST TO A. O. M. A. VISITORS

CHICAGO, Nov. 11.—The oil men of the city are showing a great deal of interest in the convention of the American Oil Men's Association, which will be held at Congress Hotel, November 16, 17 and 18. At the meeting of the Chicago Oil Men's Club last week, the members volunteered to act as host for the visiting oil men. Arrangements are being completed for a general entertainment on the evening of November 16, to take the form of an athletic carnival and buffet supper.

A committee was appointed to make arrangements consisting of B. L. Majewski of the Shaffer Oil & Refining Co., Everett Miles of the Murphy-Miles Oil Co., Chicago, C. E. Dowd, Lynch-Clarisey Oil Co., C. E. Ephgrave of the Carson Petroleum Co., Joseph Mudd, Marland Refining Co., I. A. Archambault, Pennsylvania Oil Co., Evanston; Frank Spencer, Spencer Petroleum Co., and R. W. Starrett, Agni Motor Fuel Co.,

SUNBURST CO. ASKS REDUCTION IN FREIGHT

GREAT FALLS, Mont., Nov. 8.—The Sunburst Oil & Refining Co. has filed a formal complaint with the Montana Railroad Commission asking a reduction in freight rates on crude transported to its refinery by the Great Northern Railway Co. Reductions of 40 per cent in the rate from Sunburst, 43.3 per cent from Kevin and 53.3 per cent from Great Falls. The present rate from all three points to the refinery here is 15 cents a hundred pounds.

In the complaint, the Sunburst Oil & Refining Co. pointed out that it had paid the Great Northern Railway Co. in freight charges more than the total capitalization of the refining company.

DOMINGUEZ REFINERY FOR SHELL OIL CO.

The Shell Oil Co. of California has announced that construction will begin immediately on a new refinery at Dominguez Hill, near Los Angeles. The plant will cost around $6,000,000, and will have an initial crude capacity of 10,000 bbls. daily. A tract of 338 acres has been acquired for the plant. Construction will be completed within six to eight months.

The company at present has three refineries in operation at Martinez, Wilmington and Coalinga, Calif. The combined capacity of these plants is approximately 75,000 bbls. daily.

SOUTHERN CRUDE OIL CO.

SAN ANTONIO, Tex., Nov. 8.—Southern Crude Oil Purchasing Co., a subsidiary of the Pan American, has opened offices for the state of Texas in this city in the Frost Building. It has a branch office in San Angelo. The company has maintained offices with the Dixie Oil Co., whose state headquarters for Texas are here, but beginning last week has separate and suites adjoining. Dixie company is a subsidiary of the Standard of Indiana and the Southern Crude Oil Purchasing Co. is a subsidiary of the Pan American.

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RIOW Constructed Shop Erected Tanks

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Low Cost per Barrel to Build and Install

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Tanks
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Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

The Question and Answer Department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

PRESSURE OF STEAM PUMPS

Will you kindly give me formula to arrive at the maximum working pressure of say 12x7x12; this is 12-inch steam-7-inch plunger and 12-inch stroke? W. E. G.

The pressure of steam pumps may be calculated from

$$\frac{A \times S.P. \times M.E. = C}{a}$$

A—Area of steam piston in square inches.
S.P.—Effective steam pressure in pounds per square inch.
M.E.—Mechanical efficiency.
a—Area in fluid piston in square inches.
C—Pounds pressure at fluid end.

The mechanical efficiency for 12-inch stroke duplex steam pump is approximately 70 per cent.

Using this formula the example mentioned would be outlined as follows, assuming that the steam cylinder is supplied with steam at 100 pounds pressure and atmospheric exhaust:

$$\frac{113.1 \text{ sq in} \times 100 \text{ lbs.} \times 70\% \text{ eff.} = 206 \text{ lbs. approx}}{38.48 \text{ sq. in.}}$$

THE USE OF GEOPHYSICS IN LOCATING FAVORABLE OIL STRUCTURES

What are the basic facts upon which the instrumental methods depend for the location of petroleum deposits? Are they reliable outside of a district where there are salt deposits?—R. P. P.

On this subject, see this department April 22, 1926; also articles by Doctor Heiland in The Oil and Gas Journal, July 22 and August 5, 1926.

The geophysical methods need not be confined to salt dome districts but such deposits have a special significance and facilitate the work when making the observations with the instruments.

An article by Professor Tuchel of the University of Berlin in the October Mining Congress Journal explains the reasons for these methods, and the following is taken from his article:

He states that geophysical methods are based on physical characteristics of rocks and minerals, such as density, magnetism, elasticity and electrical conductivity.

There are four methods of application. The first is that of the measurement of gravitation. The second is the magnetic method. These measure the variations of natural energy in the earth. A third is the seismic and acoustic method, based upon the elastic conditions of the various formations. Seismic investigation occupies itself with artificially achieved earthquake impulses, and acoustic research deals with the transmission of sounds through the earth's crust. The fourth, or electric method, depends wholly on the conductivity of the various formations. This fourth method is chiefly applicable to metalliferous ore bodies.

The selection of any particular method depends upon the experience of the operator, who must be familiar with all. Observation to date indicates a combination of methods as most successful. These investigations should be correlated by the same experts, and where conclusions remain in doubt, a single drill hole will frequently interpret the whole district.

The author refers to co-operation between the gravimetric and seismic methods which is effective on the Gulf Coast, where the major oil companies use both methods for locating and outlining salt domes.

The value of geophysical methods is the reduction of actual and expensive drilling costs, and the ability to drop leases without wasting money for useless work, with corresponding concentration of money, energy and intelligence on more favorable locations.

FREIGHT CLASSIFICATION WEIGHTS PER GALLON

Can you give me the list of petroleum products as classified by the railroads on the basis of weight per gallon? If you can give me these together with the gravities it will be appreciated.—R. I.

There are three official classification districts. The Official Classification Territory includes that east of the Illinois and Indiana state line and north of the Ohio and Potomac Rivers. Southern Classification Territory is located east of the Mississippi River and south of the Ohio and Potomac Rivers. The Western Classification Territory is all the rest of the United States.

In the Official and Southern districts all petroleum products, tankcar shipments, take the same weight, which is 6.6 pounds per gallon.

The freight classification for tankcar shipments in the Western Territory follows:

Wt. per gal. in Lbs.	Product	Gravity A.P.I.
6.6	Natl. gaso.	72—92
6.6	Gasoline	up to 72
6.6	Naphtha	up to 58
6.6	Kerosene	40—45
6.6	Distillate	36—42
6.6	Amber dist.	32—36
6.6	Lubricating	all
6.6	Wax	all
7.4	Gas oil	30—36
7.4	Fuel oil	all
7.4	Crude	all
8.6	Road oil	all

The rates are based on products and the railroads do not consider the gravity in any instance.

COLOR AND ODOR OF CRACKED PRODUCTS

What condition seems to control bad color and odor in cracked products? Is it scorching action or is it the formation of natural products that normally have these characteristics?—E. G. S.

All of the products obtained from cracking do not have a poor color or a bad odor. It is thought that color and odor of certain portions of the material from pressure stills are distinct properties of some hydrocarbons and particularly those of the closed chain groups. The aromatics produce more compounds having pronounced odor and color than the open chain hydrocarbons. Substances containing sulphur and nitrogen enter into the structure of many colored substances and dyes.

Is not scorching action simply another term which may be used in place of decomposition? There may be conditions under which some very small part of the total volume of oil in a still may be heated to a higher temperature than the rest, and this small part would then decompose in a somewhat different manner than the greater part of the oil. Another class of compounds would probably be produced under the excessive heating. It has been reported that some ersylic acid has been found in certain distillates from a cracking still and this fact may confirm your suggestion of scorching.

COMPOSITION OF THE ASH FROM PETROLEUM COKE

Will you advise the average per cent of soluble salts, ferric oxide and silica in petroleum coke produced from Mid-Continent crude? Are all of the above ingredients contained in the analysis showing the total ash in the coke?—J. R. M.

There are only a limited number of analyses of petroleum coke available so we are not in a position to say what would represent the average coke. The quantity of the various salts and other solid matter must depend upon the condition of the crude, which, of course, varies over a wide range when considered from the angle of the final concentration in the ash. The analysis given below is of a coke which was made from clean crude. The total quantity of ash was 0.80 per cent.

Composition of Ash	
Iron oxide (Ferric oxide)	36.65%
Sand (Silica)	22.40%
Salt (Sodium Chloride)	5.50%
Other soluble salts	33.05%
Undetermined	2.40%
Total	100.00%

The analysis of the ash represents the solid matter contained in the oil, but there may be some other solid matter present in the original sample which would not appear in an analysis of this kind. Substances which are not found in the ash include volatile salts and organic matter; these would be driven off by the heat when making the ash.

GROWTH ON CONDENSER COILS

I have difficulty in keeping moss from covering our coils in the coil houses in our gasoline plants. I have washed it off with the fire hose with only indifferent success. It is caused by the sun shining on the pipe as in the coil houses which are covered we do not have any trouble with this moss at all. Would appreciate any help you can give.—E. H. C.

Very small quantities of blue stone, copper sulphate, have been found to prevent this kind of growth. You would have to experiment in order to determine the proper quantity but once the growth is under control it would not be necessary to add the copper sulphate very often.

If it is not too expensive you might cover the coils and thus do away with the trouble according to your experience in the covered houses. A tight covering should not be required, for good shade may be all that is needed.

CONDENSING SURFACE

What is the method for determining the required condensing surface for a small refinery?—M. R.

A. D. Smith in Day's Handbook, page 15, assumes that 14 bbls. of water at 70 degrees Fahrenheit are available for cooling each barrel of distillate produced. He states that on the basis of per barrel of distillate produced per hour that topping through gas oil, with 1.5 pounds of steam in the still per gallon of distillate, there should be 70 square feet of condensing surface should be available. When rerunning, with 2.5 pounds of steam in the still per gallon of distillate, there should be 70 square feet. When fire and steam stilling the unfinished gasoline the steam used in the still may vary between 1.5 and 10 pounds per gallon of the distillate; in this case 150 square feet should be available.

Complete calculations would involve analyses of the crude, specific and latent heat of the oil, distillate and water together with the weights of each fraction to be obtained overhead. Based on an analysis, including the various fractions, Mr. Smith on page 162 of the same publication arrives at 1.3 square feet of condensing surface required for each gallon of distillate per hour. With small quantities of water available this should be doubled, or 2.6 square feet to the gallon, equivalent to 109.2 square feet for each barrel of distillate per hour.

SPECIFIC HEAT AND COOLING MEDIUM

Is it more advantageous to use water for cooling bearings, under proper conditions, than it is to use oil as the cooling medium?—G. S.

It depends on conditions. Under some circumstances water should be used but this is not always possible. Water has the advantage over oil in that the specific heat (number of B.t.u. necessary to raise one pound of the liquid 1 degree Fahrenheit) of oil is about one-half that of water. In other words, oil will conduct away only half as much heat as will water for a given temperature, or one-half the cooling power.

EMULSIONS AND SLUDGES

What is the difference between an emulsion and a sludge in connection with the behavior of a lubricating oil?—E. R. N.

The two words, emulsion and sludge, are frequently used in the same sense. An emulsion may be a temporary suspension of air or particles of water, for example, in an oil, while a sludge is commonly a sediment or mud formed as a permanent product from an emulsified oil.

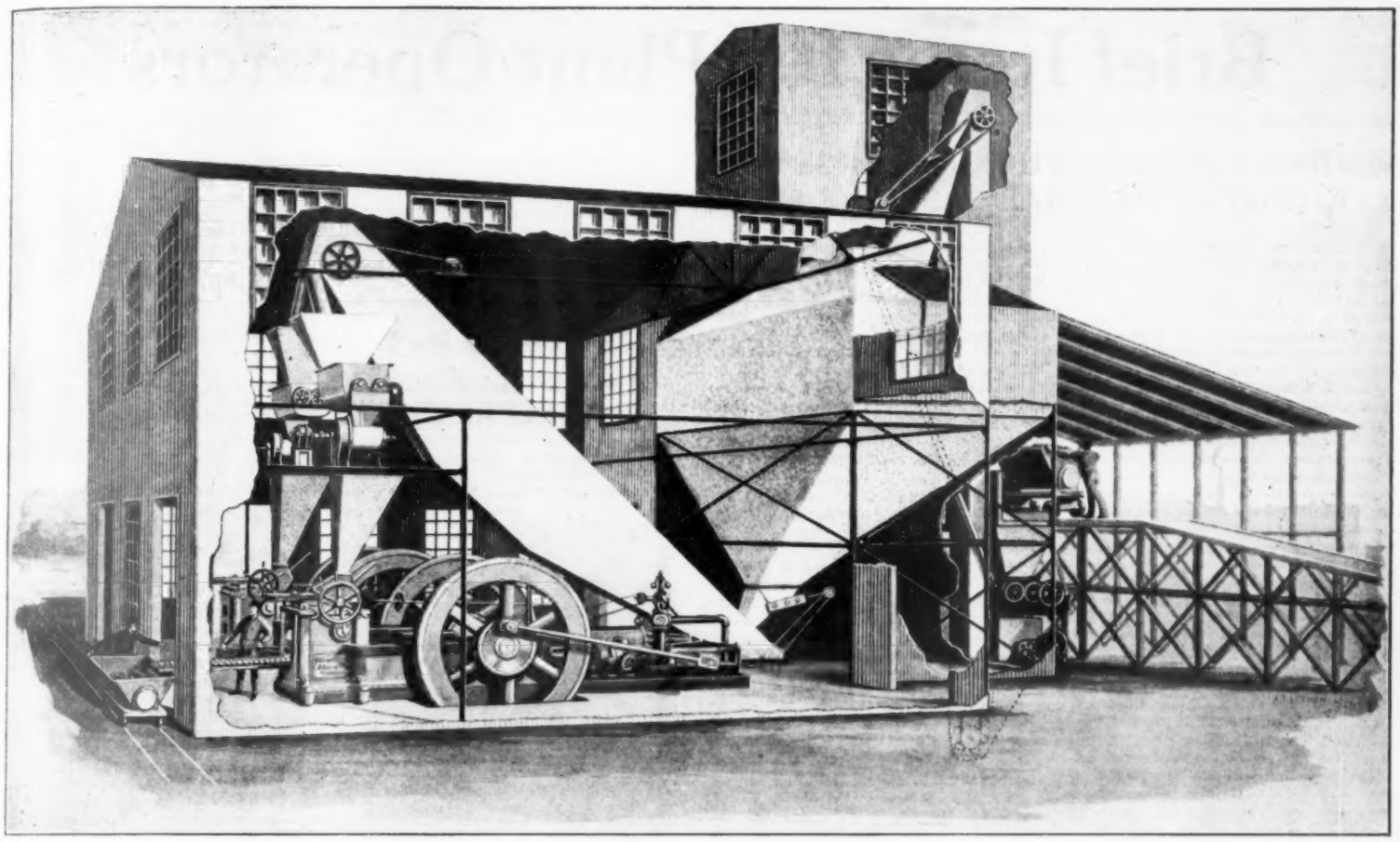
Pure water and good kerosene may form an emulsion when shaken together, but on standing will soon separate without the formation of a sludge, a suspended mass or a sediment.

Sludges indicate a breaking down of the oil from causes which are numerous. Too much wax in the lubricating oil; general decomposition, with the generation of acids; combination of metals with fatty acids to produce soaps; condensation of water and high temperatures may all have a part in the formation of sludges

LINE PIPE WORKING PRESSURE

What is the maximum working pressure carried on 10-inch line pipe which weighs 35 pounds to the foot?—W. I. C.

According to standard reference tables 10-inch pipe, lap welded and weighing about 35 pounds to the foot has an ultimate bursting pressure of 2,856 pounds. When allowing a factor of safety of 5, the working pressure should be 570 pounds, and 286 pounds if a factor of safety of 10 were desired.



This Plant Brings New Profits To Modern Oil Refineries

The installation of the Fernholtz Briquetting Process enables the refinery using any modern cracking process to convert waste or near waste (oil-coke residue) into a profitable by-product, for which there is a strong and growing demand in ALL parts of the country.

The Process is adaptable to every refinery producing 20 tons or more per day of oil-coke residue.

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Briquetting Engineers
718 Board of Trade Building
LOS ANGELES, CALIF.

Fernholtz Briquetting Process

Brief Items for Plant Operators

SEMINOLE POOL TO FURNISH LARGE OUTPUT OF NATURAL GASOLINE SOON

The new Seminole Field of Oklahoma which for several weeks has been rapidly adding to the total of crude oil production of the country will in the near future be a major source of natural gasoline. Five companies either have plants in operation or under construction and it is practically certain that a sixth company will announce a construction program within a few days. When all these programs are completed in the next 90 to 120 days it is estimated the field will have a natural gasoline output around 125,000 gallons daily.

Conditions in the field for the most part are favorable to the natural gasoline manufacturer. In the first place the gasoline content of the gas obtained from the wells producing from the Wilcox sand is exceptionally high. Manufacturers who have conducted tests estimate the average gasoline content of all the gas from the Wilcox sand is 2½ gallons per 1,000 feet. Some of the gas has tested as high as 4 gallons.

The gas contains practically no sulphur compounds and has been found easy to treat. At present most of the wells are producing several million feet of gas daily. This large flush production will naturally decline with the bringing in of additional wells but those who have investigated the field agree that a large settled flow of gas is assured with a gradual increase in the gasoline content.

The railroad facilities are better than usually found in a new oil field. The Rock Island railroad passes through the field and most of the manufacturers are locating their plants so they will not have to pump their gasoline long distances to loading rack facilities.

Independent Plant

The plants so far in operation are of the portable or semi-portable type. The success of the portable installation on the Fixico lease (Section 26-9-6) of the Independent Oil & Gas Co. is probably as good example of the value of the portable equipment as the industry has ever known.

The Independent company drilled one of the discovery wells of the field. The large crude production was accompanied by a gas flow and the company which is a newcomer in natural gasoline production decided to install a Newton portable unit with a rated capacity of 4,500 gallons daily. The unit was rushed to the lease and placed in operation. The unit at present is producing between 18,000 and 20,000 gallons of natural gasoline daily and has a record of 23,000 bbls. for a 24-hour period. It is handling the gas from the discovery wells and four additional wells which have since been drilled. The company is fortunate in having gas which has averaged about 3½ gallons of gasoline daily.

The company does not expect to increase the capacity of the plant or replace the portable absorption and distillation unit with permanent equipment. It will be operated as long as the gas supply justifies.

Carter Program

The largest program in the field is that of the Carter Oil Co. This company at present has a two-unit portable plant in operation on its lease in Section 35. These two units are producing approximately 6,000 gallons daily.

In addition the company has two permanent oil absorption plants under construction each of which is expected to have an output of 40,000 gallons daily when completed in about 90 days. One of the plants is located in the main pool (Section 15-9-6) and the other about three and one-half miles northwest in the Searight pool (Section 34-10-6). These plants will be similar in construction to the company's plants in the Cromwell Field of Oklahoma.

The Sinclair Oil & Gas Co. this week will start work on a 10,000,000-foot plant on its Cudjo lease in Section 35. This will be an oil absorption plant.

The Pure Oil Co. is moving equipment to its lease in Section 26-9-6. The company has not yet decided just how large the plant will be but it will probably have an initial capacity of from 5,000,000 to 7,500,000 feet of gas daily.

Empire Plants

On its Bowleg lease in Section 26 the Empire Gasoline Co. is building a 10,000,000-foot plant which will be in operation about December 1. The company since July has had in operation a semi-portable plant in the southeast quarter of Section 24. This plant is handling 3,000,000 feet of gas daily. The company has a large potential gas supply from the properties of the Indian Territory Illuminating Oil Co. Both companies are subsidiaries of the Empire Gas and Fuel Co.

In addition to the above named companies it is known that the Gypsy Oil Co. also has under consideration the building of a plant. The exact location or size of the plant has not been announced.

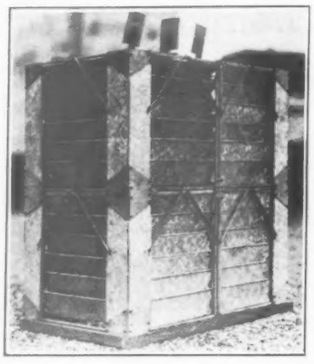
The Mid-Continent Petroleum Corp., Barnsdall Oil Co., Tidal-Osage Oil Co. and the Amerada Petroleum Corp. are other large manufacturers of natural gasoline which have holdings in the Seminole Field. None of these companies at present expects to build plants.

SOMERSET REFINERY SOLD

SAN ANTONIO, Tex., Nov. 8—The Southern Refining Co.'s plant at Somerset has been sold under foreclosure of the Commonwealth National Bank of San Antonio to C. L. Witherspoon, one of the stockholders. Affairs of the refinery are being readjusted and it is reported the refinery, which has been shut down since the middle of September, will be running again by the last of November.

Engineers Build Portable Cooling Tower for Plants

Application for a patent has recently been filed by Alexander B. Morris and C. F. Powell of Tulsa in connection with an improvement in cooling towers for gasoline plant and refinery uses. The objects of this device are to provide a cooling tower which is sectional, portable and salvable at close to 100 per cent and can be carried in stock by the manufacturer and shipped by truck for immediate delivery, and which can be speedily erected in the field by common labor. The tower also will automatically prevent water being blown through the sides and so becoming a source of costly waste or costly nuisance.



New Portable Tower

These objects seem to be capable of full accomplishment in the Morris tower. The sections, which are 8 feet by 10 feet in size, are built up of 3-inch and 4-inch angles, strongly crossed braced, and carry six 2 feet by 8 feet louvers hinged at the top and opening inward. The sections are identical and can be combined so as to form a tower of any desired dimensions. The louvers on opposite sides of the tower are balanced against each other through a cable which passes across the top of the structure, and around a short drum to which a wind vane is attached. Wind blowing against one side of the tower relieves the tension on the cable supporting the louvers on that side, and increases the tension on the cable supporting the louvers on the opposite side, resulting in the louvers on the leeward side closing tight when the wind blows with sufficient strength to carry water through the tower.

The drum and wind vane merely add to this tendency to move by supplying a slight additional strain on the cable in the direction of the wind, thus assuring operation. A simple adjustment permits any part of the tower to be locked shut, thereby cutting off all circulation of air and reducing the danger of freezing in protracted cold spells.

Portable Feature

The sections are of convenient size for handling on trucks and for erecting. Two men and a team, working with gin-pole, should be able to erect a 12-foot by 20-foot by 20-foot tower (12 sections with corners) in one day, and to complete the work, tightening bolts, adjusting louvers, etc., in one day more. All exposed surfaces are to be galvanized after fabrication, and all bearings to be of noncorrosive steel in bronze bushings.

AMONG THE TECHNICAL MEN

Theodore A. Peck, who has been appointed as chairman of the lubricating oil committee of the Independent Oil Men of America, has a wide acquaintanceship among the manufacturers and distributors of lubricating oils.

Theodore A. Peck

Previous to his entry in the oil business he was engaged for 16 years in the design and manufacture of engines and machinery. He dropped this work to become chief engineer of the Vacuum Oil Company in charge of the automotive lubricating department at Chicago. He held this position for several years.

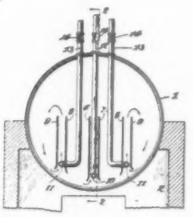
In 1919 he became chief engineer of the automotive division of the Pierce Oil Corporation and in 1921 he consolidated the industrial, marine, mining and railroad lubricating branches of the company into one group. Since that time he has confined his efforts to research work covering the utilization of several types and grades of lubricants.

Mr. Peck will now devote his entire time to the work of the lubricating department of the Independent Oil Men of America, the marketing branch of the National Petroleum Marketers Association. The committee of which he is chairman establishes the standards and issues the certificate of merit on all lubricants marketed under the brand of the Independent Oil Men of America. Mr. Peck is a member of the American Society of Mechanical Engineers, the American Society of Testing Materials and the American Chemical Society.

Recent Patents

(Additional Patents on Page 168)

1,601,727. Process and Apparatus for Cracking Hydrocarbon Oils. Warren F. Faragher, William Arthur Gruse, and Frederic Horace Garner, Pittsburgh, Pa., assignors to Gulf Refining Co., Pittsburgh, Pa., a Corporation of Texas. Filed January 15, 1921. Serial No. 437,481. 5 Claims. (Cl. 196—68.)



1. The method of cracking oils which comprises heating a body of oil in a still to a cracking temperature by the external application of heat to the still, subdividing the main body of oil in the still into a plurality of vertically disposed smaller bodies freely communicating at their upper and lower ends respectively, and causing circulation of the oil in the still in a plurality of paths or cycles by introducing upwardly flowing gaseous currents acting on the "air-lift" principle into some but not all of the subdivided smaller bodies near the lower end thereof.

NORTH TEXAS FIELDS

(Continued from Page 39)

Apple & Brandeberry's No. 1 Ancell-A had sand at 1,755-59 feet and water sand at 1,762-69 feet. It was plugged back to 1,762 feet, where it pumped 12 bbls. of oil and 15 bbls. of water. Beasley Drilling Co.'s No. 1 Banta was dry and abandoned at 1,500 feet. Bridwell & Heydrick's No. 10 Ward & Todd was a failure at 2,395 feet; No. 1 Wrangler pumped 15 bbls. at 1,866-95 feet.

Clark & Campbell's No. 1 Herber swabbed 211 bbls. from broken oil sand at 1,842-80 feet; No. 1 Ward & Todd-J was dry and plugged at 1,958 feet. Clark and others' No. 11 Ward & Todd made 175 bbls. at 1,899-1,907 feet. Continental Oil Co.'s No. 2 Burnett-0 pumped 63 bbls. at 1,573-88 feet. Culbertson Co.'s No. 44 Waggoner pumped 30 bbls. from broken oil sand at 1,428-46 feet. Hammon and others' No. 1 Kemp & Kell was dry and abandoned at 1,854 feet. Kimmell & Dillard's No. 4 Fassett & Tuttle pumped 20 bbls. at 1,356-72 feet.

Magnolia Petroleum Co.'s No. 4 Fassett pumped 28 bbls. at 1,362-68 feet. W. Prechel's No. 1 Goetze was dry and abandoned at 2,007 feet. The Texas Company's No. 6 Foster & Saunders was dry and abandoned at 2,298 feet; No. 314 Waggoner was a failure and plugged at 2,529 feet; No. 318 Waggoner pumped 85 bbls. at 1,736-50 feet.

Wilbarger County

Frazier & Hammond's No. 1 Marriott was dry and abandoned at 1,635 feet. Humble Oil & Refining Co.'s No. 10 Waggoner-H swabbed 95 bbls. from sand at 2,211-17 feet; No. 16 Waggoner-H was put on the pump and estimated good for 80 bbls. at 2,410-25 feet; No. 3 Waggoner-N swabbed 113 bbls. at 2,413-20 feet.

Magnolia Petroleum Co.'s No. 55 Sumner pumped 12 bbls. at 1,786-88 feet; No. 1 Maggie Waggoner was dry and abandoned at 2,110 feet. Phillips Petroleum Co.'s No. 8 Waggoner-H pumped 95 bbls. from oil sand at 2,390-2,416 feet; No. 4 Waggoner-HH swabbed 250 bbls. from lime at 2,301-05 feet, total depth 2,320 feet, and was drilling deeper; No. 1 Waggoner-JJ swabbed 197 bbls. from sand at 2,415-20 feet; No. 7 Waggoner-NN swabbed 243 bbls. from sand at 2,274-92 feet, total depth 2,297 feet; No. 5 Waggoner-UU was flowing 210 bbls. through tubing and packer from sand at 2,240-74 feet.

Prairie Oil & Gas Co.'s No. 4 Waggoner-A was dry and abandoned at 2,427 feet.

Young County

Atlantic Oil Producing Co.'s No. 11 Rachuig-B swabbed 100 bbls. at 1,163-68 feet. Bridwell & Mayfield's No. 1 Hamilton was dry and abandoned at 1,004 feet. Lederman and others' No. 1 Garrett made 15 bbls. at 526-42 feet. Madden & Hunt's No. 13 Benson pumped 200 bbls. at 865-67 and 872-98 feet, after previously swabbing 260 bbls.; No. 14 Benson pumped 50 bbls. at 859-93 feet.

Magnolia Petroleum Co.'s No. 10 Little pumped 42 bbls. in 12 hours at 1,273-86 feet. Roberts Oil Co. and Carter & Ruff's No. 10 Stewart pumped 75 bbls. at 806-21 feet. Schermerhorn Oil Co.'s No. 1 Prideaux made 35 bbls. at 491-501 feet. Woods & Ho'brook's No. 2 Watson made 20 bbls. at 567-68½ feet.

NEW LOCATIONS

Crane County

Prairie Oil & Gas Co.'s No. 3 University Lands, 330 feet south and 990 feet west NE cor. Section 39, Block 30, University Land. Simms Oil Co.'s No. 1 Hughes, 330 feet from the south and west lines of W half NE, Section 88, Block X, offsetting Marland Oil Co.'s Hughes-D lease. The rig was on the ground. Zweifel and others' No. 1 W. H. Cowden Co., 330 feet SE cor. NE, Section 8, Block X, C. C. S. D. & R. G. N. G. Survey. Marland Oil Co. & Zock's No. 1-B Cowden, 330 feet from the south and east lines NE, Section 81, Block X, same survey.

Crockett County

Republic Production Co.'s No. 2 L. P. Powell, 150 feet south and 2,211 feet west NE cor. Section 62, Block BB, G. C. & S. F. Survey.

Jones County

Gibson Oil Corp. and Johnson's No. 1 C. M. Largent, 5,000 feet north and 6,500 feet east of SW cor. DeWitt County School Land Survey No. 149, being at C SE of Lot 50. Grisham, Hunter & Wildman's No. 1 George B. Birchfield, 5,210 feet from the east line and 2,500 feet from the south line of Birchfield tract, Harrison County School land, No. 333. Garland & Diamond's No. 1 E. D. Glynn, 330 feet SE cor., Section 18, Deaf and Dumb Asylum lands. Grisham, Hunter & Wildman's No. 1 Williams, 200 feet from the north line and 7,920 feet from the west line, Harrison County School Land Survey, No. 334. Hutson & Weaver's No. 1 A. T. Smith, 600 feet from the south line and 2,560 feet from the west line, Section 51, Block 18, T. & P. Survey.

PETROLEUM GEOLOGISTS' PROGRAM FOR FALL MEETING AT NEW YORK

The fall meeting of the American Association of Petroleum Geologists will be held November 15-16-17 at the Hotel Pennsylvania, New York City. Petroleum geologists from oil fields all over the world are to present papers at the foreign symposium of this meeting. Specially prepared discussions are to be given on the problem of continental drift, led by Dr. W. A. J. M. van Waterschoot van der Gracht of the Marland Oil Co. of Ponca City, Okla.

Reduced round-trip rates on railroads with stop-over privileges at Washington, Chicago, Philadelphia and other points are good until December 30. Many of the geologists attending the meeting expect to visit the Sesquicentennial. The Yale-Harvard football game is to be held at New Haven, November 20, following the geological meetings.

C. H. Wegemann, Pan American Exploration Co., 120 Broadway, chairman of the program committee, announces more than 30 papers are to be presented on oil fields and oil prospects of China, Siberia, New Zealand, Persia, Australia, Spain, Santo Domingo, and other countries. Special papers are also prepared on the use of airplane photography in geological mapping, descriptions of shoestring sands, medical aspects of foreign explorations and other timely topics.

Hotel reservations may be made through the general chairman, E. L. DeGolyer, 65 Broadway, New York City, or direct to the Hotel Pennsylvania, where the meetings are held. A banquet will be held Tuesday, November 16.

A list of papers and authors follows:

Charles Lawrence Baker, "Panuco Oil Field."

Frederick G. Clapp and M. L. Fuller, "Oil Possibilities of Northeast China."

Frederick G. Clapp, "Oil Possibilities Desert Basin of West Australia;" "Oil Possibilities Northwest Basin of West Australia;" "Oil Possibilities of Australia;" "Oil Possibilities and Fields of New Zealand."

Wallace Lee, "Oil Prospects of Siam."

F. Julius Fohs, "The Geology of Oil and Gas Possibilities of Palestine and the Siniatic Peninsula."

G. S. Hume, (Director Geological Survey of Canada), "Canadian Oil Fields."

Arthur Iddings, "Oil Possibilities of Peru."

Kobayashi, Kiichiro, "Oil Fields of Russian Sakhalin."

Dr. Van der Gracht, "Theory of Continental Drift."

E. A. Hall, "Geologic Mapping by Airplane Photography."

J. V. Dorr, "Age of the Tantoyuca Formation."

Dr. R. H. Palmer, "Geology of Eastern Hidalgo and Vera Cruz."

H. Sadik, "Oil Fields of Egypt."

John L. Rich, "Tracing Shoestring Sand Bodies."

E. W. Shaw, "Notes on the Oil Fields of Persia and Mesopotamia."

J. J. Galloway, "Geology and Oil Prospects of the Peninsula of Yucatan."

Joseph H. Sinclair and T. Wasson, "Explorations East of the Andes in Ecuador."

F. H. Lahee, "The Petroliferous Belt of Central Western Mendoza Province, Argentina."

W. B. Heroy (Title not yet submitted.)

R. A. Liddle, "Tectonics of the Maracaibo Basin."

Hamilton A. Garner, "Notes on the Stratigraphy and Structure of Colombia."

Charles Hamilton, "Oil Field Operation in Venezuela."

Dr. E. P. DeBellard, Medical Director Beacon Sun Co., Valera, Venezuela (Introduced by Mr. Kay), "Working Conditions in the Venezuelan Oil Fields From the Medical Standpoint."

Fred H. Kay, "Life in Venezuela."

Dr. J. B. Burnett, "Notes on the Oil Fields of Venezuela."

Samuel Williston and C. R. Nichols, "Geology of the State of Falcon, Venezuela."

Faison Dixon, "Oil Development in Spain."

H. Harper McKee, "Notes on the Oil Possibilities of Santo Domingo."

LOWER DIFFERENTIALS FOR CRUDE JUSTIFIED

(Continued from Page 82)

tively high has been mentioned. This is also a factor which a refiner will consider in buying his crude. In general the lower the gravity of the crude the greater will be the yield of these products. With the price situation which has prevailed during the past eight months, several skimming plant operators have found it advantageous to purchase a low gravity crude with the view of getting maximum yields of these products rather than pay the top prices for the higher gravity crudes and then depend on gasoline to make up the extra operating costs.

Thus the lowering of gasoline prices with advances in other products, coupled with increased cracking facilities, have tended to decrease the importance of gravity as a crude price factor. These developments explain the attitude of the refiners in regard to a lowering of price differentials based on gravity. These same developments will be of increasing importance in the future and it is conceivable as one prominent operator contends that in time "gravity will cease to be considered in determining crude oil schedules," as it was up to a few years ago.

Table Shows Situation

In order to give a concrete example of the working of the 8-cent differential and the 5-cent differential the accompanying table was prepared. This table is largely self-explanatory. The two crudes considered are representative grades. The yields given approximate those actually obtained by a Oklahoma refinery operating on Kansas crudes. The prices are those obtaining in the Oklahoma (Group 3) market at present.

The table shows that under the present Prairie schedule the refiner would have a much better chance for profitable operation using the 32 gravity Augusta crude than with the high gravity Greenwood crude not only in the skimming operation but also the skimming and cracking operation. In the case of skimming with the Augusta crude, the difference between the crude price at the well and the refinery realization or total return is 24.7 cents and in the case of the Greenwood crude -.06 cents per barrel. This reflects an actual condition in which it has been impossible to operate a skimming plant profitably with high gravity crude on a skimming basis unless the operator had some marketing advantage over his competitor.

The same relative situation applies to the skimming and cracking operation. The cracking operation adds to the operating cost per barrel but this is more than offset with a greater total return.

With the present Carter schedule it will be noted that a different situation exists. With this schedule the chances of profit in refinery operation are practically the same with the high and low gravity crudes. It is not intended that the data given in the table should be considered as showing the operations of all plants. There are so many variable factors in refining that it cannot be said that data from one plant is representative of all.

However a check will show that the same rule in regard to gravity is applicable to all refineries. The operating principles of all plants are the same and within limited areas all sell on the same market.

Other Crudes

In order to show a more general condition in regard to gravities and refinery operations the writer prepared the following table. These data are based on yields obtained by the Bureau of Mines in distillation tests. These tests, of course, consider only the probable yields and return from a skimming operation based on the crude schedules of the Prairie Oil & Gas Co.

Okla. Field	Gravity	Price Per Bbl.	Total Return	Difference
Slick	30.	$1.81	$2.15	.34
Healdton	30.9	1.81	2.20	.39
Yale	33.2	2.05	2.28	.23
Blackwell	38.7	2.45	2.59	.14
Osage	35.5	2.21	2.38	.17
Burbank	37.2	2.37	2.35	-.02
Garber	46.3	3.01	2.96	-.07

Late Fields

(Continued from Page 39)

area of Union County, Arkansas, and the test started making 25,000,000 feet of gas and spraying a little salt water. The gas is coming through the 6-inch and between the 6 and 8-inch pipe. The test blew 12 hours and went dead. The hole will probably be abandoned and another test made, it was announced.

GULF COAST

HOUSTON, Tex., Nov. 9.—The Yount Lee Oil Co.'s No. 11 Gladys in the Spindletop deep sand section, completed around 4,000 feet, is flowing 3,500 bbls. initial. The location is on the west side, where seven failures and two small wells were completed recently around 3,500 feet. Some of these will now be drilled deeper.

The Gulf Production Co. deepened No. 1 Mann there to 3,300 feet and got a 1,200-bbl. well. Its No. 8 Roche is heading 350 bbls. at 3,000 feet.

The Rio Bravo Oil Co. has a location for No. 100 I. & N. O. Railway, nearly one-half mile north of production.

VENEZUELA

Lago Oil & Transport Co. has completed No. 2 Lagunillas, in Lake Maracaibo, Venezuela, with initial production of 5,100 bbls. daily through a ¾-inch and 1⅛-inch choke, with pressure of 190 pounds, at a depth of 3,500 feet, regarded as proving a new field at Lagunillas, in which area the Gulf Oil completed a large well several months ago.

The Lago well is three-quarters of a mile southeast of the discovery well brought in by the Gulf Oil Corp. on Venezuelan Petroleum holdings. Gulf Oil is drilling No. 2 Lagunillas well of Venezuelan Petroleum at 1,885 feet and has derricks up for Nos. 3 and 4, between the two producing wells. Gulf is also drilling at 2,795 feet Gulf-Venezuelan No. 1 Laguna well, 3½ miles south.

Lago has completed No. 120 at La Rosa, producing 1,200 bbls. daily through ¾-inch choke.

Production of Lago in week ended October 29, totaled 117,707 bbls., against 110,501 bbls. in the preceding week and 94,194 bbls. in the week ended October 15. Shipments totaled 132,835 bbls. in the week ended October 29, against 96,066 bbls. in the preceding week and 100,688 bbls. in the week ended October 15.

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

	Nov. 9		Nov. 2		Oct. 26	
OKLAHOMA (Group 3)—						
50-52 450 end point (Naphtha)	.09⅛	.09⅜	.09⅜	.09⅝	.09⅜	.09⅝
56-58 450 end point	.08⅞	.09	.09¼		.09¼	
58-60 450 end point	.09		.09¼	.09⅜	.09¼	.09⅜
58-60 437 end point (U. S. Motor)	.09	.09½	.09½	.09¾	.09½	.09¾
60-62 400 end point	.10	.10¼	.10½		.10⅝	.10½
64-66 375 end point	.10½	.10¾	.10¾	.11	.10¾	.11
68-70 360 end point	.11¼	.11½	.11½	.11¾	.11⅜	.11⅝
KANSAS—						
58-60 437 end point (U. S. Motor)	.09½	.09¾	.09¾	.10	.09¾	.10⅛
NORTH TEXAS—						
48-50 450 end point (Naphtha)	.09	.09¼	.09¼	.09½	.09¼	.09½
50-52 450 end point (Naphtha)	.09¼	.09¼	.09¼	.09½	.09¼	.09½
56-58 450 end point	.08¾	.09	.09⅛	.09¼	.09⅛	.09¼
58-60 437 end point (U. S. Motor)	.09	.09¼	.09½	.09¾	.09½	.09¾
60-62 400 end point	.10	.10⅛	.10⅜	.10½	.10¼	.10⅜
64-66 390 end point	.10⅛	.10¼	.10⅝	.10¾	.10⅜	.10⅝
64-66 375 end point	.10¼	.10½	.10¾		.10⅝	.10¾
68-70 360 end point	.11¼		.11⅜	.11⅝	.11¼	.11⅜
NORTH LOUISIANA—						
58-60 437 end point (U. S. Motor)	.09¼	.09½	.09½	.09¾	.09¾	.10
ARKANSAS—						
58-60 437 end point (U. S. Motor)	.09¼	.09½	.09¾	.10	.09¾	.10
ROCKY MOUNTAIN STATES—						
*58-60 437 end point (U. S. Motor)	.12	.12½	.12½	.12¾	.12½	.12¾
PENNSYLVANIA—						
52 Naphtha	.11½	.11¾	.11½	.11¾	.11½	.11¾
54 Naphtha	.11½	.11¾	.11½	.11¾	.11½	.11¾
56 Gasoline	.11⅝	.11¾	.11¾	.12	.11¾	.12
58 Gasoline	.11¾	.12	.12	.12¼	.12	.12¼
60 Gasoline	.12½	.12¾	.12¾	.13	.12¾	.13
62 Gasoline	.13	.13¼	.13¼	.14	.13¾	.14
64 Gasoline	.13¼	.13½	.14	.14¼	.14	.14¼
66 Gasoline	.15¼	.15½	.15¼	.15½	.15¼	.15½
68-70 Gasoline	.17¼	.17½	.17¼	.17½	.17¼	.17½
CALIFORNIA—						
54-58 437 end point (U. S. Motor) domestic	.09¼	.09½	.09½	.10	.10	.10½
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 end point (Naphtha)	.09¼	.09½	.09½	.09⅝	.09½	.09⅝
56-58 450 end point	.09	.09¼	.09¼	.09⅜	.09¼	.09⅜
58-60 437 end point (U. S. Motor)	.09½		.09½	.09¾	.09½	.09¾
60-62 400 end point	.10¼	.10½	.10½	.10¾	.10⅜	.10½
64-66 375 end point	.10¾	.11	.10⅞	.11⅛	.10⅝	.11
68-70 360 end point	.11½		.11½	.11¾	.11⅜	.11½

*Colorado points.

NATURAL GASOLINE

	Nov. 9		Nov. 2		Oct. 26	
OKLAHOMA (Group 3)—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.09¼	.09⅜	.09	.09¼	.09	
Grade A, 72-79.9, 375 e.p., rec. 90%	.09¼	.09½	.09¼		.09	
Grade BB, 84-92, 375 e.p., rec. 85%	.08¾	.09	.08⅝	.08¾	.08½	.08⅝
Grade B, 76-83.9, 375 e.p., rec. 85%	.08¾	.09¼	.08⅝	.08¾	.08½	.08⅝
Grade C, 80-90, 375 e.p., rec. 78%	.08⅝	.08¾	.08⅜	.08½	.08¼	
NORTH TEXAS—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.09¼	.09½	.09	.09¼	.09	
Grade A, 72-79.9, 375 e.p., rec. 90%	.09¼	.09½	.09¼		.09	.09¼
Grade BB, 84-92, 375 e.p., rec. 85%	.08¾	.09	.08¾		.08½	.08⅝
Grade B, 76-83.9, 375 e.p., rec. 85%	.08¾	.09	.08¾		.08½	.08⅜
Grade C, 80-90, 375 e.p., rec. 78%	.08⅝	.08¾	.08⅜	.08½	.08¼	
NORTH LOUISIANA—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.09⅞	.10	.09⅝	.09¾	.09⅜	.09½
Grade B, 76-83.9, 375 e.p. rec. 85%	.09¾	.09⅞	.09⅝	.09⅝	.09⅛	.09⅜
Grade C, 80-90, 375 e.p., rec. 78%	.09½	.09¾	.09¼	.09⅜	.09	.09⅛
CALIFORNIA—						
75-85, 375-390 end point	.11½	.12	.11½	.12	.11½	.12
CHICAGO DISTRICT (Based on Group 3)—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.09	.09⅜	.09	.09¼	.09	.09⅛
Grade A, 72-79.9, 375 e.p., rec. 90%	.09	.09⅜	.09	.09¼	.09	.09⅛
Grade BB, 84-92, 375 e.p., rec. 85%	.08½	.08¾	.08½	.08¾	.08½	.08¾
Grade B, 76-83.9, 375 e.p., rec. 85%	.08½	.08¾	.08½	.08¾	.08½	.08¾
Grade C, 80-90, 375 e.p., rec. 78%	.08¼	.08⅜	.08⅜	.08½	.08¼	.08½

MOTOR NATURAL GASOLINE

	Nov. 9		Nov. 2		Oct. 26	
OKLAHOMA (Group 3)—						
60-62 450 end point	.09¼		.09¼	.09½	.09¼	.03½
64-66 437 end point	.09¼		.09½		.09½	
NORTH TEXAS—						
64-66 437 end point	.09⅛	.09¼	.09⅜	.09½	.09⅜	.09½
PENNSYLVANIA—						
*60-62	.12¼	.12½	.12¼	.12½	.12¼	.12½
*64-66	.12¼	.12½	.12¼	.12½	.12¼	.12½
*66-68	.12¼	.12½	.12¼	.12½	.12¼	.12½
*68-70	.12¼	.12½	.12¼	.12½	.12¼	.12½
CHICAGO DISTRICT (Based on Group 3)—						
60-62 450 end point	.09¼		.09⅜	.09½	.09¼	.09½
64-66 437 end point	.09¼	.09½	.09½	.09⅝	.09½	.09¾

*At Sistersville, W. Va.

BURNING OIL

	Nov. 9		Nov. 2		Oct. 26	
KANSAS—						
41-43 water white Kerosene	.07	.07¼	.07¼	.07⅝	.07¼	.07⅝
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.06½	.06¾	.06¾	.06⅞	.06¾	.06⅞
42-44 water white Kerosene	.06⅞	.07	.07	.07¼	.07	.07¼
NORTH LOUISIANA—						
41-43 prime white Kerosene	.07	.07¼	.07¼	.07½	.07¼	.07½
ROCKY MOUNTAIN STATES—						
*40-41 water white Kerosene	.09½	.09¾	.09¾	.10	.09¾	.10
NORTH TEXAS—						
41-43 water white Kerosene	.06½		.06¾		.06¾	
ARKANSAS—						
41-43 water white Kerosene	.07	.07¼	.07¼	.07½	.07¼	.07½
PENNSYLVANIA—						
43 Kerosene prime white	.08¼	.08½	.08¼	.08½	.08½	.08¾
45 Kerosene water white	.08½	.08¾	.08½	.08¾	.08¾	.09
46 Kerosene water white	.09	.09¼	.09	.09¼	.09¼	.09½
47 Kerosene water white	.09½	.09¾	.09½	.09¾	.09¾	.10
34 Neutral	.07½	.07¾	.07½	.07¾	.07½	.07¾
34 Sundebloom Neutral	.08½	.08¾	.08½	.08¾	.08½	.08¾
36 Miners' Neutral	.07¼	.07½	.07¼	.07½	.07¼	.07½
30 Mineral Seal	.08½	.08⅝	.08½	.08⅝	.08½	.08⅝
CALIFORNIA—						
38-40 water white (high burning test)	.07	.07½	.07	.07½	.07½	.08
Engine distillate, 43-45 445 end point	.07¾	.08	.07¾	.08	.07¾	.08
Engine distillate, 42-44 480 end point	.07¼	.07½	.07¼	.07½	.07¼	.07½
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white Kerosene	.06⅝	.06⅞	.06¾	.06⅞	.06¾	.07
42-44 water white Kerosene	.07¼	.07½	.07⅛	.07¼	.07¼	.07½

*Colorado points.

FUEL OILS

	Nov. 9		Nov. 2		Oct. 26	
KANSAS—						
24-26 Fuel Oil	1.35	1.40	1.35	1.40	1.45	1.50
32-36 Gas Oil	.04½	.04⅝	.04½	.04⅝	.04½	.04⅝
38-40 Distillate	.05½	.05¾	.05½	.05¾	.05½	.05¾
OKLAHOMA (Group 3)—						
Below 22 Fuel Oil (sellers' cars)	1.20	1.25	1.20	1.27½	1 20	1.27½
22-26 Fuel Oil (sellers' cars)	1.25	1.27½	1.27½	1.30	1.27½	1.30
24-26 Fuel Oil (sellers' cars)	1.27½	1.32½	1.35		1.35	
26-30 Fuel Oil (sellers' cars)	1.35	1.40	1.37½	1.42½	1.37½	1.42½
28-30 Fuel Oil (sellers' cars)	1.50		1.50	1.52½	1.50	1.52½
32-36 Gas Oil (dark)	.04¾	.04¼	.04⅛	.04¼	.04⅛	.04¼
32-36 Gas Oil (cracking stock)	.04¼	.04⅜	.04¼	.04⅜	.04¼	.04⅜
36-38 Distillate	.04⅞	.05	.05¼	.05½	.05¼	.05½
38-40 Straw Distillate	.05	.05⅜	.05½	.05¾	.05½	.05¾
NORTH TEXAS—						
24-26 Fuel Oil (sellers' cars)	1.50	1.60	1.50	1.60	1 45	1.50
32-36 Gas Oil (straw)	.04	.04¼	.04	.04¼	.04	.04⅛
38-40 Straw Distillate	.04⅞	.05	.05⅜	.05⅝	.05⅜	.05⅝
NORTH LOUISIANA—						
18-20 Fuel Oil	1.20		1.20	1.25	1.20	1.25
32-36 Gas Oil (straw)	.04¾	.04½	.04¼	.04½	.04⅛	.04⅜
32-36 Gas Oil (dark)	.04⅛	.04⅜	.04	.04¼	.04	.04¼
36-38 Distillate	.05	.05¼	.05	.05¼	.05	.05¼
ARKANSAS—						
38-40 Distillate	.05¼	.05⅝	.05½	.05¾	.05½	.05¾
32-36 Gas Oil (straw)	.04¼		.04¼		.04¼	
16-20 Refinery Fuel Oil	1.20	1.25	1.22½	1.25	1.22½	1.25
GULF COAST (South Texas)—						
Gas Oil	.05½	.05⅝	.05½	.05⅝	.05½	.05⅝
Fuel Oil	1.75	1.85	1.75	1.85	1.75	1.85
PENNSYLVANIA—						
30-34 Fuel Oil	.06¼	.06½	.06	.06¼	.06	.06¼
36-40 Fuel Oil	.06½	.06¾	.06½	.06¾	.06½	.06¾
CALIFORNIA—						
33-36 Distillate	.04	.04¾	.04	.04¾	.04	.04¾
27-32 Distillate	.03½	.04	.03½	.04	.03½	.04
15-20 Fuel Oil, Bunkers (at tide water)	.92½	1.04	.92½	1.04	.92½	1.04
27 plus Diesel	1 15	1.19	1.15	1.19	1.15	1.19
CHICAGO DISTRICT (Based on Group 3)—						
24-26 Fuel Oil (sellers' cars) Group 3	1.32½	1.35	1.32½	1.35	1.35	1.40
22-26 Fuel Oil (sellers' cars) Group 3	1.30	1.35	1.30	1.32½	1.30	1.35
18-22 (Group 3)	1.22½	1.27½	1.22½	1.27	1.25	1.30
18-20 (Smackover)	1.25	1.30	1 27½	1.30	.125	1.30
32-36 Gas Oil	.04¼	.04¼	.04¼	.04¼	.04¼	.04⅜
36-38 Distillate	.05¼	.05½	.05⅜	.05½	.05½	.05¾
38-40 Straw Distillate	.05½	.05¾	.05⅝	.05⅞	.05¾	.06

LUBRICATING OILS AND WAX

	Nov. 9		Nov. 2		Oct. 26	
OKLAHOMA (Group 3)—						
70-80 vis., 2½ color, 20-25 cold test	.06	.06¼	.06	.06¼	.06	.06¾
100 vis., 2 color, 20-25 cold test	.06¾	.07	.06¾	.07	.06¾	.07
100 vis., 3 color, 20-25 cold test	.06½	.07	.06½	.07	.06½	.07
150 vis., 3 color, 20-25 cold test	.09½	.10	.09½	.10	.09½	.10
150 vis., 4 color, 20-25 cold test	.09¾		.09¾		.09¾	
180 vis., 3 color, 23-28 cold test	.10½	.11½	.10½	.11½	.10½	.11½
180 vis., 4 color, 23-28 cold test	.10	.10½	.10	.10½	.10	.10½
200 vis., 3 color, 23-28 cold test	.10¾	.12¼	.10¾	.12¼	.10¾	.12¼
200 vis., 4 color, 23-28 cold test	.11¼	.11½	.11¼	.11½	.11¼	.11½
220 vis., 3 color, 25-30 cold test	.13	.13½	.13	.13½	.13	.13½
220 vis., 3 color, 25-30 cold test	.13		.13		.13	
240 vis., 3 color, 25-30 cold test	.14	.15	.14	.15	.14	.15
240 vis., 4 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14½
280 vis., 3 color, 25-30 cold test	.16	.17	.16	.17	.16	.17
280 vis., 4 color, 25-30 cold test	.15½	.16½	.15½	.16½	.15½	.16½
180 vis., 5 color, 23-28 cold test	.09¾	.10¼	.09¾	.10¼	.09¾	.10¼
200 vis., 5 color, 23-28 cold test	.10	.11¼	.10	.11¼	.10	.11¼
220 vis., 5 color, 25-30 cold test	.12	.12¼	.12	.12¼	.12	.12¼
240 vis., 5 color, 25-30 cold test	.13	.14	.13	.14	.13	.14
280 vis., 5 color, 25-30 cold test	.15	.16	.15	.16	.15	.16
Cylinder Stocks:						
600, steam refined, dark green	.08	.11	.08	.11	.08	.11
600, steam refined, light green	.06	.07	.06	.07	.06	.07
190-200 vis. @ 210 Bright Stock	.33	.35	.33	.35	.33	.35
150-160 vis. @ 210 Bright Stock	.28	.31	.28	.31	.28	.31
Waxes:						
124-126 White Crude Scale Wax	.04½		.04½	.04⅝	.04¾	
PENNSYLVANIA—						
150, 3 color	.23		.23		.23	
180, 3 color	.26½		.26½		.26½	
200, 3 color	.28¾		.28½		.28¾	
220, 3 color	.31		.31		.31	
600, steam refined	.12¼		.12¼		.12¼	
635, steam refined	.15½		.15½		.15½	
650, steam refined	.16		.16		.17	
600, Pennsylvania flash	.21		.21		.21	
630, Pennsylvania flash	.30½		.30½		.32½	

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

*550, E filtered	.19		.19		.19	
600, E filtered	.21½		.21½		.21½	
*600, E filtered	.21½		.21½		.21½	
600, D filtered	.27		.27		.27	
550, E filtered	.18		.18		.18	
550, D filtered	.22		.22		.22	
Pennsylvania Bright Stock	.39½		.40½		.40½	
122-124 White Crude Scale Wax	.05	.05⅛	.05	.05⅛	.05	.05⅛
†124-126 White Crude Scale Wax			.05⅛	.05¼	.05⅛	.05¼

*At Warren, Pa. †At New York City.

GULF COAST (South Texas)—						
Zero Black	.06	.07	.06	.07	.06	.07
No. 2 color, 100 vis., pale oil	.11	.12	.11	.12	.08½	.09
No. 3 color, 200 vis., pale oil	.11	.12	.11	.12	.11	.12
No. 3½ color, 300 vis., pale oil	.12	.13	.12	.13	.12	.13
No. 3¾ color, 500 vis., pale oil	.14	.15	.14	.15	.14	.15
No. 4 color, 750 vis, pale oil	.17	.18	.17	.18	.17	.19
No. 2 plus color, 200 vis., pale filtered	.21½		.21½		.21½	
No. 2 color, 300 vis., pale filtered	.24½		.24½		.24½	
No. 2½ color, 500 vis., pale filtered	.27½		.27½		.27½	
No. 2½ color, 750 vis, pale filtered	.35½		.35½		.35½	
No. 5 to 6 color, 200 vis., red oil	.10	.10½	.10	.10½	.10	.10½
No. 5 to 6 color, 300 vis., red oil	.11½	.12	.11½	.12	.11½	.12
No. 5 to 6 color, 500 vis., red oil	.12½	.13	.12½	.13	.12½	.13
No. 5 to 6 color, 750 vis., red oil	.16	.17	.16	.17	.16	.17
CALIFORNIA—						
130 vis., 2½-3 color	.10	.10½	.10	.10½	.10	.11½
200 vis., 2½-3 color	.10½	.11	.10½	.11	.13½	.14½
300 vis., 3 -3½ color	.11	.11½	.11	.11½	.15	.16
350 vis., 3½-4 color	.11	.11½	.11	.11½	.15½	.17½
400 vis., 3½-4 color	.12½	.13	.12½	.13	.18	.19
Red Neutrals:						
200 vis., 4½-5 color	.09	.09½	.09	.09½	.12	.13
300 vis., 5 -6 color	.09½	.10	.09½	.10	.13	.14
400 vis., 5 -6 color	.11½	.12	.11½	.12	.15	.16
500 vis., 4½-5 color	.13	.13½	.13	.13½	.18	.19½
500 vis., 5 -6½ color	.12	.12½	.12	.12½	.16	.17
600 vis., 6½ plus color	.12½	.13	.12½	.13	.17	.18½

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

Gasoline:	Nov. 9	Nov. 2	Oct. 26
U. S. Motor, 58-60 437	.12	.12	.12
Export, 64-66 375	.13	.13	.13
Kerosene, prime white, 41-43	.10½	.10½	.10½
*Bunker Oil "C" 14-16, per bbl.	1.85	1.75	1.75
*Diesel Oil, 28-30, per bbl.	2.50	2.50	2.50
Gas Oil, 28 plus	.06¾	.06¾	.06¾
Furnace Oil (tankwagon)	.11	.11	.11
Cylinder Oil, light filtered, 600 s.r.	.29	.29	.29
Bright Stock, No. 5, 150 vis., at 212 F.	.42	.42	.42
White Neutral, No. 1, 170 vis., 1 color	.37	.37	.37
Spindle Oil, No. 1 red, 230 vis., 5½ color	.17½	.17½	.17½
Pale Oil, "25," 170 vis., 3½ color	.13	.13	.13
Pale Oil, "28," 100 vis., 2 color	.08	.08	.08
Red Oil:			
No. 3, 160 vis., 7 color	.11	.11	.11
No. 2, 212 vis., 5½ color	.12	.12	.12
No. 1, 265 vis., 5½ color	.13½	.13½	.13½
Polar, 295 vis., 6 color	.14	.14	.14
Paraffin Wax, refined:			
120-122 a.m.p., per lb.	.05¾	.05¾	.05¾
125-127 a.m.p., per lb.	.05⅞	.05⅞	.05⅞
130-132 a.m.p., per lb.	.06⅜	.06⅜	.06⅜
135-137 a.m.p., per lb.	.06⅝	.06⅝	.06⅝
Petroleum, in bbls., per lb.:			
Dark green	.01⅞	.01⅞	.01⅞
Amber	.03⅜	.03⅜	.03⅜
Extra amber	.03¾	.03¾	.03¾
Cream	.05⅝	.05⅝	.05⅝
Lily white	.07⅝	.07⅝	.07⅝
Snow white	.08⅝	.08⅝	.08⅝

*Lighterage 5.5c a barrel extra.

NEW YORK CASE EXPORT PRICES

	Nov. 9	Nov. 2	Oct. 26
Gasoline, U. S. Motor, 58-60	.27.15	.27 15	.27.40
Kerosene:			
Standard white Kerosene	.19.15	.19.15	.19.15
Water white Kerosene	.20.65	.20.65	.20.65

LOS ANGELES EXPORT PRICES

	Nov 9	Nov. 2	Oct. 26
Kerosene water white	.05½ .06	.05½ .06	.05½ .06½
U. S. Motor Gasoline, 54-56 437 e.p.	.08¾ .09¼	.08¾ .09¼	.08¾ .09¼

CRUDE OIL PRICES

OKLAHOMA, KANSAS AND NORTH TEXAS

***Prairie Oil & Gas Co.**

(Oklahoma, Kansas and North and East Central Texas)

(Effective May 15)

25° to 28.9°	$1.65
29° to 29.9°	1.73
30° to 30.9°	1.81
31° to 31.9°	1.89
32° to 32.9°	1.97
33° to 33.9°	2.05
34° to 34.9°	2.13
35° to 35.9°	2.21
36° to 36.9°	2.29
37° to 37.9°	2.37
38° to 38.9°	2.45
39° to 39.9°	2.53
40° to 40.9°	2.61
41° to 41.9°	2.69
42° to 42.9°	2.77
43° to 43.9°	2.85
44° to 44.9°	2.93
45° to 45.9°	3.01
46° to 46.9°	3.09
47° to 47.9°	3.17
48° to 48.9°	3.25
49° to 49.9°	3.33
50° to 50.9°	3.41
51° to 51.9°	3.49
52° and above	3.57

*Other major purchasers except as noted below.

Humble Oil & Refining Co.

(Effective November 1)

(North and East Central Texas, Ranger, Mexia, Powell, Richland, Wortham, Currie, Moran, Big Lake, Nacona and Lytton Springs)

28° to 28.9°	$1.50
29° to 29.9°	1.55
30° to 30.9°	1.60
31° to 31.9°	1.65
32° to 32.9°	1.70
33° to 33.9°	1.75
34° to 34.9°	1.80
35° to 35.9°	1.85
36° to 36.9°	1.90
37° to 37.9°	1.95
38° to 38.9°	2.00
39° to 39.9°	2.05
40° to 40.9°	2.10
41° to 41.9°	2.15
42° to 42.9°	2.20
43° to 43.9°	2.25
44° to 44.9°	2.30
45° to 45.9°	2.35
46° to 46.9°	2.40
47° to 47.9°	2.45
48° to 48.9°	2.50
49° to 49.9°	2.55
50° to 50.9°	2.60
51° to 51.9°	2.65
52° and above	2.70

Postings below 28° gravity 5 cents less for each degree.

Magnolia Petroleum Co.

(Effective November 2)

(Oklahoma, Kansas and North and East Central Texas, except Corsicana heavy, and Lytton Springs of South Central Texas)

Below 28° (May 15)	$1.30

Other grades same as Humble Oil & Refining Co. in north Texas.

Iatan (May 15)	$1.15
Corsicana heavy (May 15)	1.25
Panola County (May 15):	
30° to 34.9°	$1.95
35° to 37.9°	2.10
38° and above	2.25

Carter Oil Co.

(Effective November 2)

(Oklahoma and Kansas)

Same gravity schedule and prices as posted by Humble Oil & Refining Co. in north Texas.

The Texas Company

(Effective November 5)

Oklahoma, Kansas, north and north central Texas.

Same schedule as posted by Humble Oil & Refining Co. in north Texas.

TEXAS PANHANDLE

Humble Oil & Refining Co.

(Effective September 22)

Carson-Hutchinson Counties	$1.25
Wheeler County (Oct. 25)	$1.25
Gray County (November 1):	
28° to 28.9°	$1.00
29° to 29.9°	1.05
30° to 30.9°	1.10
31° to 31.9°	1.15
32° to 32.9°	1.20
33° to 33.9°	1.25
34° to 34.9°	1.30
35° to 35.9°	1.35
36° to 36.9°	1.40
37° to 37.9°	1.45
38° to 38.9°	1.50
39° to 39.9°	1.55
40° to 40.9°	1.60
41° to 41.9°	1.65
42° to 42.9°	1.70
43° to 43.9°	1.75
44° and above	1.80

Kay County Gas Co.
Magnolia Petroleum Co.

All Fields	$1.25

Note: Magnolia Petroleum Co. prices effective September 22, and Kay County Gas Co., October 4.

WEST TEXAS

Kay County Gas Co.
Humble Oil & Refining Co.

Crane, Upton and Crockett Counties.

Below 26°	$ .80
26° to 26.9°	.85
27° to 27.9°	.90
28° to 28.9°	.95
29° to 29.9°	1.00
30° to 30.9°	1.05
31° to 31.9°	1.10
32° to 32.9°	1.15
33° to 33.9°	1.20
34° to 34.9°	1.25
35° to 35.9°	1.30
36° and above	1.35
Howard County	1.65

Kay County Gas Co. prices effective September 15, for Crane-Upton County crude oil. Humble Oil & Refining Co. prices effective October 25. Howard County crude posted by Kay County Gas Co. and Magnolia Petroleum Co.

GULF COAST

***Humble Oil & Refining Co.**

(Effective August 30)

All fields except Spindletop

Grade A	$1.40
Grade B—	
Below 25°	1.40
25° to 25.9°	1.45
26° to 26.9°	1.50
27° to 27.9°	1.55
28° to 28.9°	1.60
29° to 29.9°	1.65
30° to 30.9°	1.70
31° to 31.9°	1.75
32° to 32.9°	1.80
33° to 33.9°	1.85
34° to 34.9°	1.90
35° and above	1.95
Spindletop	
Grade A	$1.25
Grade B—	
Below 25°	$1.25
25° to 25.9°	1.30
26° to 26.9°	1.35
27° to 27.9°	1.40
28° to 28.9°	1.45
29° to 29.9°	1.50
30° to 30.9°	1.55
31° to 31.9°	1.60

*All major purchasers except as noted below. Sun Pipe Line Co. prices effective September 1.

The Texas Company

(Effective August 30)

Grade A	$1.40
Grade B	1.40
†Light Crude—	
35° to 35.9°	1.95
36° to 36.9°	2.00
37° to 37.9°	2.05
38° to 38.9°	2.10
39° to 39.9°	2.15
40° and above	2.20

†The Texas Company's postings on light crude under 35° gravity are same as Humble Oil & Refining Co.'s grades and prices for Grade B crude. Spindletop prices same as for Humble Oil & Refining Co., but classified according to The Texas Company's general schedule to 31° to 31.9° crude.

Gulf Pipe Line Co.

Jennings (La.) (Oct. 29)	$1.15

SOUTH CENTRAL AND SOUTHWESTERN TEXAS

***Magnolia Petroleum Co.**

Luling (contract) (Eff. May 18)	$1.30
Mirando (Webb, Jim Hogg and Zapata Counties) (May 15)	1.25
Rockdale-Minerva (Milam County)	1.25
Thrall	1.00
Callihan (Live Oak and McMullen Counties) (May 15)	1.75
†Lockhart (Lytton Springs)	
Somerset (Grayburg Pine Line Co.):	

(Effective October 14)

28° to 28.9°	$1.25
29° to 29.9°	1.30
30° to 30.9°	1.36
31° to 31.9°	1.54
32° to 32.9°	1.62
33° to 33.9°	1.70
34° to 34.9°	1.78
35° to 35.9°	1.86
36° to 36.9°	1 94
37° to 37.9°	2.02
38° and above	2.10

*Texpata Pipe Line Co. and Humble Pipe Line Co. also post in Mirando Field.

†Lockhart prices same as for North and East Central Texas. Lockhart posted by Magnolia Petroleum Co. and Humble Oil & Refining Co.

ARKANSAS AND NORTH LOUISIANA

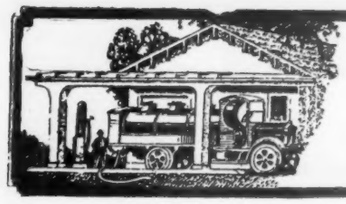
Standard Oil Co. of Louisiana

(Effective November 4)

(Caddo, Bull Bayou, Crichton, DeSoto, Haynesville, Homer and El Dorado.)

Below 28°	$1.40

(Continued on Page 152)



TANK WAGON MARKETS

Tankwagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns, Nov. 9.

ALL TANKWAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

Main Service Station Price

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Chicago Dist.—				
†Less than 100 gals.	18.0	20.0	...	13.5

Tankwagon prices on April 19, 1922; g. up 1½c; May 8, up 1c; June 27, g. and k. up 1c; July 19, g. down 2c; k. down 1c; Oct. 10, g. down 2c; Oct. 21, g. down 1c; Feb. 5, 1923, g. up 1c; Feb. 20, g. up 1c; Aug. 14, g. down 6.6c; Oct. 4, k. down 1¼c; No. 10, g. down 1.4c; Dec. 20, g. up 2c; Jan. 12, 1924, g. up 2c, k. up 1c; Feb. 5, g. up 2c, k. 1c; July 18, g. down 1c; July 30, g. and k. down 1c; Sept. 12, g. down 2c; Jan. 23, 1925, g. up 1c; Jan. 26, g. up 1c; Jan. 31, g. up 1c; Feb. 12, g. up 2c, k. up 1c; April 19, g. down 1c; July 14, g. up 1c; Aug. 25, g. down 2c, k. down 1c; Sept. 1, g. down 1c; Feb. 4, 1926, g. up 1c, k. up 1c; April 16, k. up 1c; April 24, k. up ½c; April 29, g. up 1c, k. up ½c; May 6, k. up ½c; May 17, g. and k. up 1c; July 1, k. down 1c; July 3, k. down 1c; Aug. 13, k. up 1c; Aug. 24, k. up 1c; Oct. 13, k. down 1c; Oct. 26, g. and k. down 1c.

Decatur, Ill.	18.2	20.2	...	14.0
E. St. Louis	17.1	19.35	...	13.1
Joliet	18.4	20.4	...	14.2
Peoria	18.2	20.2	...	14.0
Quincy	18.2	20.2	...	13.8
Davenport, Ia.	20.5	22.5	2.0	14.4
Des Moines	18.0	20.0	2.0	14.4
Keokuk	20.5	22.5	2.0	14.4
Sioux City	17.9	19.9	2.0	14.0
Duluth, Minn.	21.5	23.5	2.0	15.1
Minneapolis	17.2	19.2	2.0	15.1
La Cross, Wis.	21.2	23.2	2.0	14.9
Milwaukee	20.1	22.1	2.0	13.8
Madison	20.3	22.3	2.0	14.0
Detroit, Mich.	20.8	22.8	2.0	14.7
Grand Rapids	20.7	22.7	2.0	14.6
Saginaw	20.9	22.9	2.0	14.8
Evansville, Ind.	21.0	23.0	2.0	14.0
Ft. Wayne	21.4	23.4	2.0	14.4
Indianapolis	21.2	23.2	2.0	14.2
South Bend	21.4	23.4	2.0	14.4
Fargo, N D	22.9	24.9	2.0	17.1
Huron, S D	22.5	24.5	2.0	15.6
Sioux Falls	21.0	22.0	2.0	15.1
*K. C. Mo.	20.9	22.9	2.0	13.7
*Springfield	20.8	22.8	2.0	13.7
*St. Louis	19.6	21.9	2.5	13.5
*St. Joseph	20.0	22.0	2.5	13.4
‡Wichita, Kans.	18.8	20.8	2.0	13.3
Bartlesville, Ok.	19.8	21.8	2.0	13.3

NAPHTHAS

	Tank wagon	Tank car
Oleum spirits	21.0	16.0
V. M. & P. naphtha	23.0	16.5
Cleaner's naphtha	21.0	17.5

Tankwagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

*State tax is 2c. Remainder is city tax.
†Quantity price on more than 100 gallons, 17.0.
‡At all Kansas points a discount of 1 cent a gallon is allowed from the tankwagon postings on dumps of 50 gallons or more.

The following monthly rebate system is effective on tankwagon schedules throughout the territory of Standard Oil Co. of Indiana: Over 750 gallons, ½c; over 2,000 gallons, ¾c; over 3,000 gallons, 1c; over 6,000 gallons, 1½c; over 10,000 gallons, 2c. If quantity bought during the year is equal to 12 times the monthly agreed purchases the discount will be paid or credited on the entire quantity less monthly payments. Service station customers will receive discount of 1 cent a gallon on purchases amounting to 200 gallons a month or 2,400 gallons a year; and 2 cents a gallon on 600 gallons a month or 7,200 gallons a year.

STANOLIND FURNACE OIL
(Standard Oil Co. of Indiana)

Less than 100 gallons	10.0
100 to 399 gallons	9.5
400 or more gallons	9.0

SOUTHWESTERN DISTRICT

***Magnolia Petroleum Co.**

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Dallas, Tex.	†17.0	17.0	1.0	15.0
Fort Worth	†17.0	17.0	1.0	15.0
Houston	†19.0	19.0	1.0	15.0
San Antonio	†19.0	19.0	1.0	15.0
El Paso	†21.0	21.0	1.0	16.0
Texarkana	†20.0	20.0	1.0	15.0
Muskogee, Ok.	19.0	22.0	3.0	13.0
Okla. City	18.0	21.0	3.0	13.0
Tulsa	19.0	22.0	2.0	13.0
Little Rock	21.0	24.0	4.0	14.5
Ft. Smith, Ark.	21.0	24.0	4.0	14.5

*The following is the schedule of discounts on quantity gasoline sales adopted by the Magnolia Petroleum Co. in Oklahoma: Over 750 gallons a month, ½c; over 2,000 gallons, ¾c; over 3,000 gallons, 1c; over 4,500 gallons, 1¼c; over 6,000 gallons, 1½c; over 8,000 gallons, 1¾c; over 10,000 gallons, 2c. If the quantity bought during the year is 12 times the monthly agreed purchases, the discount will be paid or credited on the entire quantity for the year less any monthly purchases.

The schedule on service station deliveries is: Over 300 gallons a month, 1c; over 300 gallons a month, 1¼c; over 400 gallons, 1½c; over 500 gallons a month, 1¾c; over 600 gallons, 2c. The same rule applies for annual purchases as in the tankwagon discounts.

†Magnolia maintains only a retail schedule in Texas with dealers and large consumers allowed a flat 3-cent discount.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
*New Orleans	18.5	21.5	3.0	16.0
Alexandria	19.0	22.0	2.0	17.0
Baton Rouge	18.0	21.0	2.0	16.5
LaFayette	19.0	22.0	2.0	16.5
Lake Charles	19.5	22.5	2.0	17.0
Shreveport, La.	18.0	21.0	2.0	16.0
Memphis, Tenn.	20.0	23.0	3.0	17.0
Chattanooga	22.5	25.5	3.0	17.5
Knoxville	22.5	25.5	3.0	18.0
Nashville	21.0	24.0	3.0	18.0
Bristol	23.0	26.0	3.0	17.5
Little Rock, Ark	21.0	24.0	4.0	16.0

*Tax of 3c includes city tax of 1c.
*Louisiana kerosene prices include 1-cent State tax.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Atlanta, Ga.	22 0	25 0	3 5	18 0
Augusta	22 0	25.0	3 5	17 0
Macon	22.0	25.0	3 5	18 0
Savannah	20.0	22.0	3.5	16 0
Birm'ghm, Ala.	21.0	24.0	3.0	17.5
Mobile	20.0	23.0	3.0	16.0
Montgomery	22.0	25.0	3.0	18.5
Clarksd'le, Miss	22.0	25.0	4.0	14.5
Jackson	22.0	25.0	4.0	15.5
Natches	21.5	24.5	4.0	15.0
Vicksburg	21.5	24.5	4.0	15.0
Jack'ville, Fla.	20 0	23 0	4 0	16.0
Miami	22 0	25 0	4 0	17 5
Pensacola	21.0	24.0	4.0	16.5
Tampa	20 0	23 0	4.0	16 0
Covington	23.0	26.0	5.0	17.0
Louisville	22.0	25.0	5.0	17.0
Lexington, Ky.	23.0	26.0	5.0	17.0

In addition to the state tax of 2c on gasoline, Montgomery has city tax of 1c on gasoline and ½c on kerosene. Prices in Georgia include ½c inspection fee on gasoline and kerosene; in Florida, an inspection fee of 0.125c; in Alabama, an inspection fee of ½c on kerosene only.

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
All Ohio points	22.0	24.0	2.0	17.0

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Denver, Colo.	21.0	21.0	2.0	16.0
Pueblo	21.0	23.0	2.0	16.0
Grand Jct.	25.0	27.0	2.0	20.0
Casper, Wyo.	21.5	23.5	2.5	14.5
Cheyenne	22.5	24.5	2.5	16.0
Butte, Mont.	21.0	21.0	2.0	19.5
Helena	25.0	27.0	2.0	19.5
Salt Lake, Utah	24.0	26.0	3.5	18.0
Boise, Idaho	25.0	27.0	3.0	20.0
Twin Falls	25.0	27.0	3.0	20.0
Albuquerque, N. Mex.	27.0	27.0	3.0	18.5

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Atlantic City	18.0	....	...	16.0
Newark, N. J.	18.0	20.0	...	16.0
Annapolis, Md.	20.0	....	2.0	16.0
Baltimore	20.0	23.0	2.0	16.0
Cumberland	20.0	23.0	2.0	16.0
Washington	20.0	23.0	2.0	16.0
Danville, Va.	22.5	....	4.5	16.0
Norfolk	22.5	25.5	4.5	16.0
Petersburg	22.5	25.5	4.5	16.0
Roanoke	23.5	25.5	4.5	16.0
Richmond	22.5	25.5	4.5	16.0
Charleston, W. Va.	21.5	24.5	3.5	16.0
Keyser	21.5	....	3.5	16.0
Parkersburg	21.5	24.5	3.5	16.0
Wheeling	21.5	24.5	3.5	16.0
Charlotte, N. C.	23.0	26.0	4.0	16.0
Hickory	23.0	....	4.0	16.0
Mt. Airy	23.0	26.0	4.0	16.0
Salisbury	23.0	26.0	4.0	16.0
Charleston, S.C.	24.0	27.0	5.0	16.0
Columbia	24.0	27.0	5.0	16.0

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Albany, N. Y.	17.0	....	...	18.0
*New York	21.0	....	...	18.0
Buffalo	18.0	....	...	18.0
Rochester	18.0	....	...	16.0
Syracuse	17.0	....	...	18.0
Boston, Mass.	19.0	....	...	18.0
Augusta, Me.	24.0	....	3.0	18.0
Manchester, N. H.	23.0	....	2.0	18.0
Burlington, Vt.	23.0	....	2.0	18.0

*Price in steel barrels.
Note: Standard Oil Co. of New York does not generally quote service station price in its territory. In most cases the service station price is 2 to 3 cents higher than tankwagon price.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Omaha	18.25	20.25	2.0	14.0
McCook	21.75	23.75	2.0	15.5
Norfolk	19.0	21.0	2.0	14.5
N. Platte	21.75	23.75	2.0	15.25
Scottsbluff	21.25	23.75	2.0	14.75

PACIFIC COAST DISTRICT

Standard Oil Co. (California)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
San Francisco	15.0	18.0	2.0	15.5
Los Angeles	13.5	16.5	2.0	15.0
Fresno	15.5	18.5	3.0	17.5
Reno, Nev.	20.5	23.5	4.0	19.0
Portland, Ore.	16.0	19.0	3.0	16.5
Seattle, Wash.	15.0	18.0	3.0	16.5
Spokane	19.0	22.0	3.0	20.5
Tacoma	15.0	18.0	3.0	16.5
Phoenix, Ariz.	22.0	25.0	3.0	21.5

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND
Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
*Pittsburgh, Pa.	19.0	24.0	...	16.0
*Philadelphia	19.0	24.0	...	16.0
*Scranton	19.0	24.0	...	16.0
*Allentown	19.0	24.0	...	16.0
Altoona	19.0	24.0	...	16.0
*Erie	17.0	22.0	...	16.0
Dover, Del	21.0	24.0	2.0	17.0
Wilmington	21.0	24.0	2.0	17.0
Spring'd, Mass.	19.0	21.0	...	18.0
Worcester	19.0	21.0	...	18.0
Boston	19.0	21.0	...	18.0
Providence, R. I.	20.0	22.0	1.0	18.0
Hartford, Conn.	21.0	24.0	2.0	17.0
New Haven	21.0	24.0	2.0	18.0

*Pennsylvania tax of 2c is collected by the dealer and paid by him direct to the State.

CALIFORNIA CRUDE PRICES
***Standard Oil Co.-Union Oil Co.**
(Effective March 11)

Gravity—	Long Beach Huntington Beach Richfield Brea-Olinda Rosecrans-Dom'gues Torrance-Inglewood	Whittier La Habra Montebello	Kern River Sunset-McKittrick Midway-Sunset Elk Hills Lost Hills Beiridge	Coyote	Santa Fe Springs	Coalinga	Wheeler Ridge	Santa Maria Ventura Salt Lake
14°	.85	.85	.75	.85	....	.75	.76	.85
15°	.87	.85	.75	.85	....	.75	.75	.85
16°	.90	.85	.75	.85	....	.75	.75	.85
17°	.94	.85	.75	.85	....	.75	.75	.85
18°	.98	.86	.75	.86	....	.75	.75	.85
19°	1.04	.87	.75	.87	....	.75	.75	.85
20°	1.10	.89	.82	.90	.89	.79	.78	.90
21°	1.16	.91	.90	.98	.91	.86	.81	.97
22°	1.22	.94	1.00	1.06	.94	.93	.85	1.04
23°	1.28	.97	1.11	1.14	.97	1.00	.89	1.11
24°	1.34	1.01	1.22	1.22	1.02	1.07	.93	1.18
27°	1.52	1.13	1.56	1.46	1.24	1.28	1.05	1.39
28°	1.58	1.17	1.66	1.54	1.32	1.35	....	1.46
29°	1.64	1.21	1.77	1.62	1.40	1.42	....	1.53
30°	1.70	1.25	1.88	1.70	1.48	1.49	....	1.60
31°	1.76	....	1.99	....	1.60	1.56	....	1.67
32°	1.84	....	2.10	....	1.72	1.63	....	1.73
33°	1.92	....	2.21	....	1.84	1.70	....	1.79
34°	2.00	....	2.32	....	1.96	1.77	....	1.85
35°	2.08	....	....	....	2.08	1.84	....	1.92
36°	2.16	....	....	....	2.16	....	....	....
37°	2.24	....	....	....	2.24	....	....	....
38°	2.34	....	....	....	2.34	....	....	....
39°	2.44	....	....	....	2.44	....	....	....
40°	2.54	....	....	....	....	....	....	....
41°	2.64	....	....	....	....	....	....	....
42°	2.74	....	....	....	....	....	....	....

*Column 2—Long Beach and Huntington Beach crudes, 14 to 32 degrees, inclusive; Richfield and Brea-Olinda, 14 to 30 degrees; Torrance and Inglewood, 14 to 28 degrees; Dominguez, 24 to 42 degrees. Rosecrans crude ranges from 14 to 42 degrees, but only Union Oil Co. posts below 24 degrees.
Column 3—Whittier and La Habra crudes, 14 to 22 degrees; Montebello, 14 to 30 degrees.
Column 4—Kern River, Newhall and McKittrick, 14 to 19 degrees; Midway-Sunset and Elk Hills, 14 to 33 degrees; Lost Hills and Beiridge, 14 to 34 degrees.
Column 6—Santa Fe Springs. Only Union Oil Co. posts below 24 degrees.
Column 8—Salt Lake, 14 to 19 degrees, inclusive; Santa Maria, 14 to 30 degrees; Ventura, 14 to 35 degrees. Posted only by Union Oil Co.

TANKWAGON PRICE CHANGES

October 27—Magnolia Petroleum Co. reduced tankwagon and service station prices of gasoline 1 cent at Muskogee.

October 30—Standard Oil Co. of Kentucky reduced tankwagon and service station prices of gasoline 2 cents in Georgia and Florida. Continental Oil Co. reduced tankwagon and service station prices of gasoline 2 cents at Butte, Mont.

November 3—Standard Oil Co. of Indiana reduced tankwagon and service station prices of gasoline 4 cents at Minneapolis and St. Paul.

November 5—Magnolia Petroleum Co. reduced gasoline 2 cents at Houston, Tex.

November 6—Magnolia Petroleum Co. reduced gasoline at Texarkana, 1 cent.

November 8—Standard Oil Co. of Nebraska reduced tankwagon and service station prices of gasoline 2 cents at Omaha.

November 9—Atlantic Refining Co. reduced kerosene 1 cent in Pennsylvania and Delaware.

CRUDE PRICE CHANGES

October 14—Grayburg Oil Co. reduced Somerset crude from 5 to 65 cents.

November 4—Standard Oil Co. of Louisiana revised Arkansas and north Louisiana crude, placing Caddo, Bull Bayou, Crichton, DeSoto, Haynesville, Homer and El Dorado on one basis with below 28 gravity at $1.40, and from 28 gravity up the same posted by the Humble Oil & Refining Co. in north Texas. Other fields producing heavy oil were unchanged. The changes followed by other purchasers in these fields, including Gulf Refining Co. and Atlantic Oil Producing Co.

November 5—Magnolia Petroleum Co. and The Texas Company revised Arkansas and north Louisiana crude, adopting postings established by Standard Oil Co. of Louisiana. The Texas Company at the same time reduced north Texas, Oklahoma and Kansas crude meeting previous cuts by the Humble Oil & Refining Co., Carter Oil Co. and Magnolia Petroleum Co. Atlantic Oil Producing Co. revised its schedule for Stephens, Ark., crude as shown in accompanying tables, establishing four grades instead of two as previously.

PRAIRIE SHIPMENTS IN OCTOBER

The Prairie Pipe Line Co. delivered to refiners 4,190,377.01 bbls. of crude oil in October, a daily average of 135,173 bbls. The same company's daily average shipments in September were 130,233 bbls.

1916
1926

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Oil Securities Firm, Fairly Active

Upward Trend of Crude Production and Price Cuts Offset by Prospect of Record Consumption

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, Room 543, 30 Church St., New York City

NEW YORK, Nov. 8.—Oil securities were firm and fairly active during the past week in the face of the upward trend of crude production and price cuts. National supply reached a new high on heavy buying.

Perhaps the most talked-of development in the oil industry at present is the so-called overproduction. Domestic oil production has, in fact, reached a new high daily average for all time.

A development which is not talked of so much, but which, in the opinion of many oil men, is of far greater immediate and far-off significance, is that oil consumption has been establishing new records annually since 1921.

There is a growing belief that this winter will see a record consumption of oil products, taking the combined total of all of them. It is entirely possible that the oil industry itself will be surprised and will turn with grateful thanks to the current production of crude oil and stocks on hand as a savior of the situation, and not the menace that it is generally pictured.

Atlantic Refining—Union Oil

Perhaps, in the absence of official confirmation, the report now current that Atlantic Refining will absorb Union Oil is not worthy of repetition. However, Atlantic Refining Co. has long been a buyer of California oil, and in view of the mergers along this line already consummated, the company's reported desire to acquire a California property is not difficult to understand.

A well-informed oil man told the writer that on the Pacific Coast this merger is looked upon as a foregone conclusion, the terms alone being in doubt. Representatives of Atlantic Refining Co. and bankers for Union Oil of California, have been on the Pacific Coast for some time. The terms which seem most likely, based on past experience of such deals, are an exchange of one share of Atlantic Refining Co. for two of Union Oil. A transaction of the kind involving cash payment for all Union Oil stock by Atlantic Refining, would, it is believed, call for new financing.

Of course, an exchange of Union Oil stock for common stock of the Atlantic Refining Co. would be followed by the resumption of common dividends by Atlantic Refining at a rate making the exchange attractive to Union Oil stockholders.

Amerada Corp.

The earnings of the Amerada Corp. for the nine months ended September 30, 1926, of $3,696,801 were equivalent to $4.53 a share on the 814,800 shares of stock now outstanding, and to $5.19 a share on the average amount of stock outstanding during the period. Net for the entire year of 1925 amounted to $4.24 a share on 588,300 shares.

Anglo-Persian Oil

Sir Charles Greenway in announcing his resignation as chairman of the Anglo-Persian Oil Co. and his being succeeded by Sir John Cadman, discussing the company's operations for 1925, emphasized the strong financial position shown by an appropriation of £6,000,000 depreciation and reserves before arriving at the trading profit of £5,711,039 for the year ended March 31, 1926.

The actual value of the assets of subsidiaries, etc., shown at £21,880,430 in the balance sheet, is really considerably greater. For example, he stated, the £1 shares of the First Exploitation Co. are valued at 13s, although they paid 50 per cent dividend this year and 45 per cent last year. The large liquid resources of £5,865,191, he said, are necessary in view of the program to extend production, pipe lines, refineries, etc., in the next few years and sustain production of fields.

Royalties paid the Persian Government on the year's profits totaled £974,823, and £3,000,000 were expended in Persia for labor and other services.

Crescent Pipe Line

Announcement of distribution to stockholders of Crescent Pipe Line on account of liquidation is expected within a short time.

Marland Oil

Following a meeting of the executive committee of the Marland Oil Co., it was stated that an agreement had been executed by which J. P. Morgan & Co. would underwrite the new issue of 392,697 shares of stock offered to shareholders for subscription at $50 a share. Stockholders of record November 15 have the right to subscribe to 20 per cent additional stock. Payment may be made in full on or before December 9, or 50 per cent on or before that date and 50 per cent on or before December 30.

On amounts paid on or before December 9 the company will allow interest of 18 cents a share on each share, for which full payment shall be made on or before December 9. An allowance of 9 cents a share will be allowed on the first installment of 50 per cent paid on or before December 9.

Warrants will be issued about November 15, and full-paid stock certificates delivered on or after January 3. Subscriptions will be received only for whole shares.

Mexico-Ohio Oil

The Corporation Trust Co. has filed with the Secretary of State of Delaware a certificate of incorporation of the Mexico-Ohio Oil Co., with a capitalization of 500,000 shares of no par value.

Shaffer Oil & Refining Co.

August gross earnings of the Shaffer Oil & Refining Co. amounted to $1,956,100. Net after expenses was $492,060. Net for the 12 months ended August 31, 1926, after expenses, amounted to $5,896,626, compared with $3,865,736 for the period ended August 31, 1925.

Standard Oil of Indiana

Figures divulged for the first time were given by Colonel Stewart, Chairman of the Board of the Standard Oil Co. of Indiana, in testifying in the Government's suit against the pooling of patents for cracking crude oil. He stated that the company's sales grew from $71,000,000 in 1913 to $286,000,000 in 1925.

Standard of Indiana, he said, did 80 per cent of the business in its territory in 1913, but only 40 per cent of the total in 1925.

Investment in bulk and service stations up to the present amounts to $72,276,000, with a total of 7,735 stations.

Union Oil Subsidiary

A new company, known as the Union National Petroleum Co., has been formed by Union Oil of California interests, and has taken title to large properties in Venezuela.

Lion Oil Refining Co.

Lion Oil Refining Co. reports gross profit of $1,928,448 for the first nine months this year and balance of $1,769,544 after expenses, but before depreciation and taxes, equal to $8.40 a share.

Standard of California

At a regular meeting of the Board of Directors of Standard Oil Co. of California, regular dividend No. 3 of 50 cents per share was declared. An extra dividend of 50 cents per share was declared for the year 1926. Both dividends are payable on December 15.

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

Stocks—	Par	Clos. Quot. Nov.8	Clos. Quot. Nov.1	1926 High	1926 Low	1925 High	1925 Low	1924 High	1924 Low
Amerada Corp.	..	29⅜	28½	32⅞	21⅜	..	..	..	..
Atlantic Ref., com.	100	103	104	128⅜	97	117½	95⅛	140½	78½
Barnsdall "A"	25	*25	26⅜	33½	23½	33½	18⅜	29⅛	14
California Pet., com.	25	31½	31	38⅛	30⅝	34⅜	23⅜	29	19⅝
Houston Oil	100	54½	*55	72	50¼	85	59	82½	61
Independent Oil & Gas	..	27½	29⅛	34	20¼	41⅜	13½	16¼	5⅜
Indian Refining	10	8⅛	8⅜	13⅜	9½	14⅛	6½	7	3⅜
Lago Oil & Trans.	..	21⅜	21⅜	24½	19¼	..	..	..	..
Louisiana Oil	10	14⅜	13	19⅝	12	23⅜	13⅜	..	..
Maracaibo	10	17½	17½	28⅞	18⅜	35½	20⅝	37½	25⅜
Marland	..	42⅜	54½	63⅜	49¼	60⅛	32⅝	42	29
Mexican Seaboard	..	8⅜	9⅛	13⅜	6	22½	9	26⅜	14½
Mid-Continent Pet.	..	30½	29⅜	41	25⅝	38	25⅜	40¼	22⅝
National Supply	50	76½	73⅞	78⅜	55½	71	54⅜	72½	54
Oil Well Supply	25	*32	*31	36	30	38	33⅜	..	..
Pan. Amer., B	50	64⅜	66⅛	72⅜	56⅛	83⅞	59½	65	44½
Pan. Amer., Western B	..	34	33½	46	34	49⅜	37¼	..	..
Phillips Pet.	..	48⅞	49	52¾	42½	47⅛	36¼	52¼	28½
Producers & Refiners	50	20¼	20	17½	11	32⅜	12½	32½	29⅜
Pure Oil, com.	..	27	26⅞	31	25⅜	33⅜	25⅛	30¼	20
Royal Dutch, N. Y., sh.	13.40	48½	48⅜	57⅜	49⅜	57⅜	48¼	59½	40⅜
Shell Transport	10	*42	*41	48⅞	42	49	39⅝	42	33
Shell Union, com.	..	30½	29⅜	30⅜	24	28⅜	21⅝	22½	15⅜
Simms Pet.	10	18½	18¼	28⅝	16½	28½	17⅜	24	10⅝
Sinclair Consolidated, com.	..	18¼	18⅝	24⅞	16¾	24⅞	17	17½	15
Skelly Oil	25	32	32⅜	37⅛	27	32½	21⅜	29	17⅛
Standard of California	25	60⅞	61	63½	54	67¼	51½	68½	55½
Standard of New Jersey, com.	25	43	42⅜	46⅝	40¼	47½	38⅜	42½	33
Sun Oil Co.	..	33	32	41⅝	30⅛	43⅞	38¼	..	..
The Texas Company	25	55¼	56	58	46	55	42⅜	45⅝	37⅜
Texas Pacific Coal & Oil	10	15	15⅜	19½	12⅛	23⅜	11	15¼	8¼
Tide Water Oil	25	*27	27⅝	38⅛	30⅛	..	..	..	..
Transcontinental	..	4½	4¼	5½	3	5⅝	3½	6½	3⅜
Union Oil of California	25	55¼	55	58⅝	37½	43⅝	33⅛	30	35½
Union Tank, com.	100	*114	114½	120⅝	84¼	1134	118	132⅞	94
White Eagle Oil & Refining	..	26	26	29⅜	25⅛	31⅝	25⅝	29⅜	23⅛
Standard Oils									
Anglo-American Oil	£1	19½	19⅝	19⅝	16½	26⅜	17½	18⅜	14⅝
Borne Scrymser	100	*64	*240	295	226	240	205	164	150
Buckeye Pipe Line	50	*42⅜	44½	59½	47⅝	72	63½	85½	51
Chesebrough Mfg. Co.	25	74	*72	72⅜	63	74	48¼	62½	29¼
Continental	10	18⅞	18½	25⅞	19¼	31⅛	21⅞	..	..
Crescent Pipe Line	25	15½	*15	16	14⅜	17½	10	20	11⅜
Cumberland Pipe Line	100	105	*104½	137	108	156	128	148	108
Eureka Pipe Line	100	*41½	*43½	63⅜	47⅜	96	61¼	105	74
Galena Signal, com.	100	11½	*11	32½	9⅞	68½	23½	69⅜	62½
Humble Oil & Refining Co.	25	57	56¼	68⅛	52	89	42½	43⅜	36
Illinois Pipe Line	100	*134½	*134	144	131	154½	124	161	123
Imperial Oil, Ltd.	..	38¼	36½	38⅜	32½	39¼	27¼	119	99
Indiana Pipe Line	50	*53	*63½	68	58	84	87½	100	66
International Pet. Co.	10	31⅜	31¼	35½	28⅜	25⅝	22⅛	34⅜	16⅞
National Transit Co.	12.50	12⅝	13	26⅜	14½	25½	16½	25⅞	26⅜
New York Transit	100	*27¼	27½	51½	31	79	50	97	54½
Northern Pipe Line	100	64	*62⅝	80½	68	88	67½	107½	72
Ohio Oil Co.	25	58½	59	67⅜	55⅝	75¼	60	79½	53
Penn-Mex. Fuel	25	*19	20	24¼	15	44	19	35⅝	27
Prairie Oil & Gas	25	49⅝	50	60¼	48	65½	45⅞	269	193
Prairie Pipe Line	100	124¼	123½	127	122½	129⅝	105	111	100
Solar Refining Co.	100	*194	*196	212	184½	259	200	240	170
South Penn Oil	25	36¼	*35	50	35	‡197	139	176	117
Southwest Pa. Pipe Line	100	*55	*55	56	47½	84	50	89	68
Southern Pipe Line	50	*23	*23½	74¼	61½	103	63	100	80½
Standard of Indiana	25	64⅜	64½	70½	61⅜	70⅝	69½	69⅝	54¼
Standard of Kansas	25	19	19	36½	16½	46	30¼	50½	32½
Standard of Kentucky	25	119¼	119	134⅝	108	137	114⅝	121⅞	101
Standard of Nebraska	25	47	46	‡51½	‡42	270	231	262	198
Standard of New York	25	32¼	32⅛	47⅛	30⅝	48⅝	40	48	37⅜
Standard of Ohio, com.	100	300	298	362	292½	369	328	337½	277
Swan & Finch, com.	25	*16	15½	21	18	27	12	28	20
Vacuum Oil	25	96⅜	98	109⅝	94⅛	109½	80½	83½	50½
Miscellaneous									
Gulf Oil Corp. of Pa.	25	90½	*90	95	82½	98¼	63½	67⅜	56
Tidewater Associated	..	23⅜	22⅝	27	21	..	..	..	..

*Bid, no sales. ‡Old stock. †New stock.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange was as follows:

Nov. 8	57.84	Oct. 4	57.93	Aug. 30	59.86
Nov. 1	57.93	Sept. 27	58.78	Aug. 23	59.06
Oct. 25	56.39	Sept. 20	58.46	Aug. 16	53.34
Oct. 18	56.53	Sept. 13	59.06	Aug. 9	58.35
Oct. 11	56.54	Sept. 3	60.16	Aug. 2	59.76

INCREASE IN RECOVERY OF OIL BY WATER DRIVE

(Continued from Page 33)

cated at about the proper place commenced to increase and instead of pumping about 10 minutes as had been its usual habit for a great many years, continued to pump for two hours and a half.

We did not drill this location and I want to say that I think it was a mistake This old well with its new lease of life has never produced as much oil as any one of the seven new ones, so our advice is don't be too anxious to let an old well produce your flood oil. In our operations today unless they are located at exactly the right spot we are paying no attention to them and are drilling new wells where our plan calls for them.

These seven new and one old well have produced since December 2, 1925, approximately 10,000 bbls. of oil (that does not include the production for October.)

Needless to say early in 1926 all of the members of my company were thoroughly convinced that line and added pressure flooding was the most successful method we knew anything about so we have proceeded since in the same manner.

We are now working on a more extensive program on what is known as the Vincent farm. We have commenced the drilling of 14 flood wells and 28 producing wells across this farm. At this time 10 flood wells have been completed and 11 producing wells. These wells so far have shown to be not much better than natural wells owing to variation in pressure and newness of the flood. The pressure at times being as low as 50 pounds (five drilling wells being finished off the line.)

In conclusion, I want to say to you who are contemplating the installation of a natural or pressure flood, you cannot be too careful as to its location, the installation and general workmanship, manner in which it is started, for upon this may depend your failure or success.

Cost Hopes Versus Cost Facts

Salesmen usually think selling prices are too high. Treasurers think them too low. The trouble with a good many businesses, however, is that too many people are thinking about prices and too few about costs.

Thinking about costs cannot be done with one eye on the market and the other on net profits. It must be done with both eyes sharp on the facts of production. Only when those are seen clearly, can adjustments be made in favor of the net profits, or concessions to the market.

Of these cost facts few are more important than the fixed capital expenditures. "The effects of a wise or unwise policy in the handling of the fixed capital expenditures are permanent, far reaching, and frequently the determining factor in success or failure for the company." So states an eminent accounting authority.

The verification and adjustment of fixed asset accounts, accounting practices in regard to betterments, renewals, and additions, the adequacy of depreciation charges—all of these major factors are more safely provided for through proper appraisal service.

The American Appraisal Company

MILWAUKEE

PUBLIC UTILITIES · INDUSTRIALS · REAL ESTATE PROPERTIES · NATURAL RESOURCES

A NATIONAL ORGANIZATION

WILDCAT OPERATIONS IN PANHANDLE

(Continued from Page 40)

DALLAM COUNTY

James and others' No. 1 fee, Sec. 9, Blk. 47¼ ..... Shut down 3,870 ft.
Harry Skelly et al's No. 1 Capitol Synd., Sec. 19, Blk. 17 ..... Fishing, 1,150 ft.
Marland Oil Co. et al's No. 1 Capitol Synd., Sec. 36, Blk. 18, Capitol Synd. land ..... New loc., rigging up.

DEAF SMITH COUNTY

Julian & DeGrace's No. 1 Mrs. R. A. Hindley, Sec. 47, Blk. K-3 ..... Location.
Red Hill Oil Corp.'s No. 1 Barrett, Sec. 83, Blk. K-4 ..... Location.

DONLEY COUNTY

A. T. Drilling Co.'s No. 1 F. E. Harrington, Sec. 39, Blk. 3-C ..... Drilling, 480 ft.

GRAY COUNTY

Archer, Blake and others' No. 1 Turneau, Sec. 111, Blk. 2-B ..... Spudded and shut down.
Bay Shore Oil Co.'s No. 1 C. W. Bradford, Sec. 148, Blk. 2-B ..... T.D., 2,666 ft., water well finished.
Blackwell & McGee's No. 1 Bowers, Sec. 92, Blk. 3-B ..... Drilling, 990 ft.
Boone Drlg. Co.'s No. 1 J. S. Mackie, Sec. 115, Blk. 2-B ..... Rigging up rotary.
British-Amer. O. Co.'s No. 1 J. E. Meers, Sec. 107, Blk. 3 ..... Rigging up rotary.
Canyon Oil Co.'s No. 1 Jackson Est., Sec. 60, Blk. 2-B ..... Drilling, 2,720 ft., 4,000,000 ft. gas at 2,704 ft., half baller heavy oil at 2,809-20 ft.
Constantin and others' No. 1 Dial, Sec. 33, Blk. 35 ..... Drilling, 2,400 ft., small show oil, 2,194-2,200 ft., show gas, 2,263-65 ft., 10,000,000 ft. gas, 2,367-2,400 ft.
Cranfill Bros.' No. 1 T. B. Noble, Sec. 16, Blk. 6-A ..... Salt water, 3,105 ft., T.D., 3,200 ft., top lime, 2,549 ft., plugging to abandon.
H. B. Ellers' No. 1 Crews, Sec. 13, Blk. 28 ..... Spudded and shut down.
Empire G. & F. Co.'s No. 1 B. Hughey, Sec. 129, Blk. 2 ..... Flshing at 3,010 ft., for 6-in.
Empire G. & F. Co.'s No. 1 J. J. Wall, Sec. 161, Blk. 3 ..... 30,000,000 ft. gas, 2,805 ft., drilling, 2,880 ft.
Jack Greenwood and others' No. 1 H. B. Lovett, Sec. 26, Blk. 2-B ..... Drilling, 2,260 ft.
Gray Co. Pet. Co.'s No. 1 W. L. Herndon, Sec. 147, Blk. 3 ..... Rig.
Gulf Prod. Co.'s No. 1 R. S. McConnell, Sec. 175, Blk. 3 ..... Total depth 3,176 ft., granite wash, fishing bailer, 20 ft. oil in hole.
Johnson & Martin's No. 1 Fanny Holloway, Sec. 7, Blk. H ..... A. W. Wallace Survey, location.
Magdalene Oil Co.'s No. 1 J. E. Williams, Sec. 17, Blk. 1 ..... Spudded and shut down.
Magnolia Pet. Co.'s No. 1 Heithholt, Sec. 152, Blk. 3 ..... Setting 10-in., 1,775 ft.
Magnolia Pet. Co.'s No. 1 A. Holmes, Sec. 106, Blk. 3 ..... Rigging up.
Nabob Oil Co.'s No. 1 J. S. Morse, Sec. 48, Blk. 25 ..... T.D., 2,527 ft., 2,000,000 ft. gas, fighting cave.
Pampa Oil Co.'s No. 1 W. R. Campbell, Sec. 90, Blk. 3 ..... S.D., 1,055 ft.
Pampa Oil Co.'s No. 1 Mary Leopold, Sec. 141, Blk. 3 ..... Driving 15-in. at 200 ft.
Riley & Heck's No. 1 Mrs. Hopkins, Sec. 66, Blk. 2-B ..... Drilling, 2,000 ft.
Roxana Pet. Corp.'s No. 1 B. E. Finley, B. E. Chaney ..... Swabbed 80 bbls., sandy lime, 3,-012-19 ft., may deepen.
Slay et al's (was Henry Riley) No. 1 J. M. White, Sec. 312, Blk. 2-M ..... Repairing rig, 2,800 ft.
Skelly Oil Co.'s No. 1 A. G. McKay, Sec. 175, Blk. 3 ..... Drilling, 590 ft.
The Texas Company's No. 1 H. M. Barrett, Sec. 131, Blk. 3 ..... Rotary rig.
The Texas Company's No. 1 O. N. Frashier, Sec. 162, Blk. 3 ..... Rotary rig, drilling water well.
The Texas Company's No. 1 C. W. Saunders, Sec. 81, Blk. 3 ..... 400 ft. oil in hole, 3,285-90 ft., T.D., 3,295 ft., to shoot.
The Texas Company's No. 1 Osborne, Sec. 108, Blk. 3 ..... Rotary rig.
Travis and others' No. 1 J. Back, Sec. 44, Blk. 25 ..... Rig down.
Upham Gas Co.'s No. 1 W. E. Grammage, Sec. 4, Blk. 25 ..... Rig.
Weir, Kribs & Finklea's No. 1 B. F. Talley, Sec. 114, Blk. 2-M ..... Spudded and shut down.

HANSFORD COUNTY

Caldwell and others' No. 1 J. Adriance, Sec. 21, Blk. 3, G. H. & H. Survey ..... Location.
F. W. Dillard and others' No. 1 F. A. Davis, Sec. 50, Blk. 2 ..... Spudded and shut down.
Oklavania Oil Co.'s No. 1 Whitson, Sec. 2 ..... Drilling, 1,600 ft.

HARTLEY COUNTY

Amerada Pet. Corp.'s No. 1 Frances Farwell, Sec. 37, Block 16 ..... Spudded, 130 ft.
Deep Rock Oil Co.'s No. 1 Lyman & Balfour, Sec. 9, Blk. 2 ..... Shut down 1,710 ft.
Eslick and others' No. 1 J. B. Irving, Sec. 13, Blk. 13 ..... Shut down 1,500 ft.
W. W. Holmes' No. 1 G. B. Coots, Sec. 53, Blk. XR ..... S.D., 1,420 ft., for fuel.
Humble O. & R. Co.'s No. 1 J. M. Shelton, Sec. 63 ..... S.D., 2,385 ft. for fuel.
J. E. McKanna's No. 1 E. S. Collins, Sec. 3, Blk. LS ..... Fishing, 500 ft.
J. E. McKanna's No. 1 Frances Farwell, Sec. 10, Blk. 22 ..... S.D., 665 ft. for fuel.
J. E. McKanna's No. 1 J. M. Shelton est., Sec. 29, Blk. 202 ..... Shut down 1,990 ft.
Kork Oil Co.'s No. 1 J. M. Shelton Est., Sec. 1, Blk. 8-B ..... Spudded and shut down.
Breck Walker's No. 1 Stone, Sec. 35, Blk. ITO ..... Location.

HEMPHILL COUNTY

Andrade and others' No. 1 Humbolt, Sec. 44, Blk. 1 ..... Location.
A. J. Calhoun's No. 1 J. C. Isaacs, Sec. 189, Blk. C ..... Rig.
Dorning and others' No. 1 Alexander, Poltevent Sur. ..... Shut down, spudded.
Fisher Oil Co.'s No. 1 J. E. George, Sec. 40, Blk. 2-A ..... Running 8-in., 2,732 ft.
Hoover and others' No. 1 Schaller Est., Sec. 4 ..... Spudded and shut down.
Hoover and others' No. 1 fee, J. S. Hood Sur. ..... Drilling, 2,816 ft.
McCockrel and others' No. 1 Shaller Est., Fanning Sur. ..... Loc. abandoned.

HUTCHINSON COUNTY

Anderson & Pritchard's No. 1 Yake, Sec. 1, Blk. J ..... Drilling, 1,480 ft.
Dominion Oil Co.'s No. 1 C. H. Jasper ..... Drilling, 745 ft.
Get Oil Co.'s No. 1 W. P. Allen ..... Spudded and shut down.
Marland Oil Co.'s No. 1 State of Texas, River Bed ..... Drilling, 3,160 ft.
Lee Flowers' No. 1 Carver, William Heath ..... Shut down 1,200 ft.
Pole Cat Oil Co.'s No. 1 W. B. Haile, Sec. 24, Blk. M-21 ..... Rig.
Panfield Oil Co.'s No. 1 Luginbyhl Bros., Sec. 50, Blk. M-23 ..... Drilling, 750 ft.
Rock Island Oil Co.'s No. 1 W. A. Starnes, Sec. 32, Blk. M-23 ..... Drilling, 700 ft.
Sinclair Oil Co.'s No. 1 Williams, Sec. 43, Blk. 47 ..... 30,000,000 ft. gas, 2,535 ft., show oil, 2,905-07 ft., show oil, 2,912-14 ft., T.D., 2,929 ft., set 6-in., 2,914 ft.
Tex-O Oil Co.'s No. 1 Johnson Bros., Tomlinson ..... U.R. 5-in., 2,930 ft.
Wentz Oil Corp.'s No. 1 Cal Merchant, Sec. 34, Blk. 47 ..... Top pay, 2,777 ft., T.D., 2,805 ft., 300 ft. oil in hole, S.D., for orders.
Western Dev. Co.'s No. 1 O. W. Jarvis ..... Fishing 3,485 ft.

LIPSCOMB COUNTY

Everett et als' No. 1 Mrs. H. D. May, Sec. 612, Blk. 43 ..... S.D., 612 ft.
McCorkle and others' No. 1 Barton, Sec. 504, Blk. 43 ..... S.D., 3,645 ft., 200 ft. water in hole, 3,635 ft.

MOORE COUNTY

Amarillo Oil Co.'s No. 1 Masterson-J, Sec. 59, Blk. O-18 ..... Fishing, 2,455 ft.
Amarillo Oil Co.'s No. 2 Terry Thompson, Sec. 19, Blk. 44 ..... Drilling, 2,410 ft.
Cadman and others' No. 1 J. T. Sneed, Jr., Sec. 68, Blk. 3 ..... Small show oil, 3,225-26 ft., 800 ft. water in hole, 3,255 ft., S.D., 3,-272 ft.
Douglas Oil Co.'s No. 1 H. W. Beauchamp, Sec. 112, Blk. 44 ..... S.D., 700 ft., drilling water well.
Flowers and Marland Oil Co.'s No. 1 J. T. Sneed, Jr., Sec. 25, Blk. 1 ..... 10,000,000 ft. gas, dring., 2,910 ft.
Humble O. & R. Co.'s No. 1 Kilgore, Sec. 28, Blk. 44 ..... Drilling, 1,785 ft.
Phillips Pet. Co.'s No. 1 Sneed, N. Jones Sur. ..... S.D., 3,095 ft.
Masters Oil Co.'s No. 1 J. T. Sneed, Jr., Sec. 58, Blk. 6-T ..... Cleaning out, 1,060 ft.
Morton & Co.'s No. 1-H Rubert, Sec. 191, Blk. 2-T ..... Drilling, 1,310 ft.
Prairie O. & G. Co.'s No. 2 Sneed, Sec. 26, Blk. 6-T ..... Fishing, 3,086 ft.
Moore County Oil's No. 1 Sneed, Sec. 20, Blk. 6-T ..... S.D., 1,250 ft.
Shadler Bros.'s No. 1 John Lowery, Sec. 237, Blk. 44 ..... Drilling water well.
Shamrock Pet. Co.'s No. 1 O. E. Cober, Sec. 16, Blk. M-21 ..... S.D., 900 ft.

OCHILTREE COUNTY

W. G. Burton's No. 1 Stickler, Sec. 579, Blk. 43 ..... Shut down, 3,540 ft.
Hamilton and others' No. 1 R. E. Wamble, Sec. 144, Blk. 43 ..... Shut down 250 ft.
McCorkle Pipe Line Co.'s No. 1 R. H. Moore, Sec. 471, Blk. 43 ..... Shut down 1,600 ft.
McCorkle's No. 1 Weinett, Sec. 674, Blk. 43 ..... Rig.
Standard Dev. Co.'s No. 1 Bowden, Sec. 923, Blk. 43 ..... Shut down 900 ft.

PARMER COUNTY

Humble O. & R. Co.'s No. 1 Farwell et al, Sec. 2, Blk. 3 ..... Rigging up.

POTTER COUNTY

Amarillo Oil Co.'s No. 1 Fuqua, Sec. 4 ..... S.D., 2,045 ft.
The California Co.'s No. 1 G. A. Carey, Sec. 6, Blk. Z-6 ..... Drilling, 1,596 ft.
Greater Amarillo Pet. Co.'s No. 1 Townsite, Sec. 167, Blk. 2, A. B. & M. Survey ..... Spudded and S.D.
Gulf Prod. Co.'s No. 1 W. H. Bush, Sec. 89, Blk. 9 ..... Drilling, 3,790 ft., in gray lime.
Farmer O. & G. Co.'s No. 1 J. A. Jones, Sec. 3, Blk. 1 ..... Shut down 200 ft.
Kelmey Oil Co.'s No. 1 W. H. Bush, Sec. 19, Blk. 9 ..... Rig.

RANDALL COUNTY

Red Hill Corp.'s No. 1 J. M. Redfearn, Sec. 97, Blk. B-5 ..... Drilling, 2,100 ft.

ROBERTS COUNTY

Big Ben Oil Co.'s (was Phil Engle's) No. 1 Mrs. H. Ledrick & Sons ..... Drilling, 4,162 ft.
Gibson Oil Corp.'s No. 1 T. S. Jones, Sec. 109, Blk. C ..... Drilling, 1,825 ft.
Mercer & Dunbar's No. 1 H. A. Gill, Sec. 127, Blk. M-2 ..... Cellar.
Murphy and others' No. 1 A. W. Gill, Sec. 31, Blk. 2-M ..... Drilling, 460 ft.
Charles Page and others' No. 1 Hamilton Tract 2, Clay County School Land ..... Lost hole, 700 ft., skidding rig 31 ft. west.
Pan-State Oil Co.'s No. 1 A. H. Tandy, Section 179, Blk. 42 ..... Rigging up.
Pettijohn and others' No. 1 J. A. Meade, Sec. 29, Blk. 1-B ..... Drilling, 200 ft.
Trammel et als' No. 1 A. H. Tandy, School Land Sur. ..... Spudded and S.D.

SHERMAN COUNTY

Eclipse Drilling Co.'s No. 1 Lee Bivins, Sec. 35, Blk. 2 ..... Aban. loc.
Get Oil Co.'s No. 1 Bivins, Sec. 35, Blk. 3-B ..... S.D., 710 ft.
Phillips Pet. & Savoy, No. 1 Roach, Sec. 161, Blk. 1-C ..... Drilling, 1,665 ft.

SWISHER COUNTY

Keagan & Baker's No. 1 Stallings, Sec. 8, Blk. M-13 ..... Moving in spudder (no report).

WHEELER COUNTY

American Ref. Co.'s No. 1 E. E. Carlton, Sec. 29, Blk. 13 ..... Rotary rig.
Angus et als' No. 1 L. C. Burcham, Sec. 91, Blk. 17 ..... Rig.
Boyles & Johnson's No. 1 S. L. Lewis, Sec. 40, Blk. 24 ..... Rig.
Hill, Cook & Riley's No. 1 L. H. Webb, Sec. 61, Blk. 24 ..... Drilling, 1,650 ft.
Laycock and others' No. 1 Fee, Sec. 10, Blk. 27 ..... Fishing, 2,000 ft.
Magnolia Pet. Co.'s No. 1 E. C. Johnson, Sec. 40, Blk. 24 ..... Rig.
Mid-Continent Pet. Co.'s No. 1 J. H. Jackson ..... Moving in rig.
Murchison & Fain's No. 1 Binkley & Cain-A, Sec. 37, Blk. 24 ..... Drilling, 1,535 ft.
J. J. Rock Co.'s No. 1 T. C. Jones, Sec. 1, Blk. 34 ..... Fish. cas., 1,300 ft.
Scott, Allen & Bledsoe's No. 1 J. H. Jackson, Sec. 11, Blk. 27 ..... 30,000,000 ft. gas, 2,130-2,375 ft.
Smith and others' No. 1 W. J. Johnson, Sec. 88, Blk. 5-A ..... Rig.
Smith, Brady and others' No. 1 P. J. Sorenson, Sec. 53, Blk. 4-A ..... S.D., 700 ft.
The Texas Company's No. 1 Smith (Lewis), Sec. 40, Blk. 24 ..... Drilling, 2,220 ft., 15,000,000 ft. gas, 2,212 ft.
Upham Gas Co.'s No. 1 Cody, Sec. 38, Blk. 17 ..... Spudded and shut down.
Upham Gas Co.'s No. 1 Alexander, Sec. 92, Blk. 17 ..... Rigging up tools.
Upham Gas Co.'s No. 1 Griswald, Sec. 1, Blk. 24 ..... Rig.
E. L. Woodley, Jr.'s No. 1 Woodley, Sr., Section 13, Blk 5-A ..... Little gas, fish., 1,800 ft.
Vaughn and others' No. 1 O'Gorman, Sec. 53, Blk. 17 ..... Fishing, 1,180 ft.
World Oil Co.'s No. 1 Jackson, Sec. 11, Blk. 27 ..... Drilling, 1,850 ft.

Abbreviations—Loc., location; C. O., cleaning out; S. D., shut down; U. R., underreaming; S. R., straight reaming; T. D., total depth; Ft., feet; Sur., survey.

WEST TEXAS WILDCATS

(Continued from Page 39)

Marland Oil Co.'s No. 2 Durham, NE cor. Sec. 83, Blk. X, C. C. S. D. & R. G. N. G. Sur. ..... Top salt 640 ft., drilling 2,275 ft.
Marland Oil Co.'s No. 3 Durham, Sec. 82, Blk. X, C. C. S. D. & R. G. N. G. Sur. ..... Drilling 1,775 ft.
Marland Oil Co.'s No. 1 Mary Dawson, NE cor. Sec. 84, Blk. X, C. C. S. D. & R. G. N. G. Sur. ..... Drilling 2,955 ft.
Marland Oil Co.'s No. 2-D E. S. Hughes ..... Drilling 2,130 ft.
Marland Oil Co.'s No. 4-C E. S. Hughes, Sec. 85, Blk. X, C. C. S. D. & R. G. N. G. Sur. ..... Top salt 615 ft., drilling 1,550 ft.
Prairie Oil & Gas Co.'s No. 1 University, NE NE Sec. 39, Blk. 30, University Sur. ..... Top salt 1,140 ft., drilling 2,775 ft.
Prairie Oil & Gas Co.'s No. 2 University, SE NE NW Sec. 39, Blk. 30, University Sur. ..... Top salt 1,147 ft., drilling 2,440 ft.
Prairie Oil & Gas Co.'s No. 3 University ..... Building rig.
Prairie Oil & Gas Co.'s No. 1 Colette, SW SW Sec. 36, Blk. 31, University Sur. ..... Spudding.
Ben D. Simon & Cromwell's No. 1 Brookfield, C SE Sec. 23, Blk. 6, H. & T. C. Sur. ..... Shut down 2,195 ft., 2 bailers sulphur water per hour and show of oil 2,155 ft.
Simms Oil & Atlantic O. P. Co.'s No. 1 University, NE SE Sec. 39, Blk. 30, University Sur. ..... Top salt 1,134 ft., drilling 1,680 ft.
The Texas Company's No. 10 H. M. King, NW Sec. 85, Blk. X, C. C. S. D. & R. G. N. G. Sur. ..... Top salt 660 ft., drilling 2,185 ft.
The Texas Company's No. 11 H. M. King, Sec. 91, Blk. X, C. C. S. D. & R. G. N. G. Sur. ..... Top salt 658 ft., drilling 2,080 ft.
The Texas Company's No. 12 H. M. King, Sec. 85, Blk. X, C. C. S. D. & R. G. N. G. Sur. ..... Drilling 1,260 ft.
Texas Development Co.'s No. 1 Cowden ..... Shut down 3,820 ft.
Tidal Oil Co.'s No. 2-B University, SW SE Sec. 34, Blk. 30, University Sur. ..... Drilling 1,120 ft.
Tidal Oil Co.'s No. 3-C University, NW SE Sec. 34, Blk. 30, University Sur. ..... Shut down 2,250 ft.

CROCKETT COUNTY

Anchor Oil Co. (Cumberland) No. 1 Couch, C NE Sec. 18, Blk. QR, D. & S. E. T. T. R. R. Sur. ..... Shut down 2,025 ft.
Cranfill Brothers Oil Co.'s No. 1 Harris, C NE Sec. 4, Blk. 3, Washington County Sur. ..... Fishing bit 480 ft.
Gulf Production Co.'s No. 1-D L. P. Powell, Sec. 63, Blk. BB, G. C. & S. F. Sur. ..... Underreaming 8-in. to 2,490 ft., total depth 2,555 ft.
Humble Oil & Refining Co.'s No. 1-B Powell, Sec. 63, Blk. BB, E. L. & R. Sur. ..... Top salt 1,155 ft., drilling 2,330 ft.
J. K. Hughes' No. 3-A Powell, Sec. 2, Blk. BB-2, G. C. & S. F. Sur. ..... Underreaming 8-in., total depth 2,485 ft.
J. K. Hughes' No. 2-B Powell, Sec. 2, Blk. BB-2, N. A. Miller Sur. ..... Underreaming 8-in., total depth 2,465 ft.
J. K. Hughes' No. 2-B Powell, Sec. 63, E. L. & R. R. Sur. ..... Drilling 2,500 ft.
Magnolia Petroleum Co.'s No. 2 Shannon, SE SE Sec. 9, Blk. BB, E. L. R. R. Sur. ..... Spudded 150 ft.
William Shaffer and others' No. 1 University, C SE SE Sec. 9, Blk. 47, University Sur. ..... Bails 3 bbls., daily 2,150-2,220 ft.
Ben Simon and others' No. 1 Shannon, C SW Sec. 10, Blk. YZ, E. L. R. R. Sur. ..... Drilling 3,100 ft.
J. D. Young & Cromwell's No. 1 Shannon, SE NE Sec. 4, Blk. 10 ..... Drilling 525 ft.
Young & Cromwell's No. 1 University ..... Shut down 465 ft.

CULBERSON COUNTY

James H. Gardner and others' No. 1 Radford, C SE Sec. 39, Blk. 63, Pub. Sch. Ld. Sur. ..... Rig.
Plymouth Oil Co.'s (Big Lake) No. 1 Derrick, C W half Sec. 44, Blk. 45, Pub. Sch. Ld. Sur. ..... Drilling 1,735 ft.
Pure Oil Co.'s No. 1 Kloh & Rumsey ..... Drilling 950 ft.

DICKENS COUNTY

Bowser Mickels and others' No. 1 Pitchford ranch .....
Montray Oil Co. and Clancey English's No. 1 Blackwell ..... Drilling 900 ft.
Montray Oil Co. and Clay English's No. 1 Jones ..... Drilling 1,500 ft.

ECTOR COUNTY

J. S. Cosden and others' No. 1-A G. W. Connell, C NW Sec. 13, Blk. B-16, Pub. Sch. Ld. Sur. ..... Top new pay 3,609 ft., oil rising rapidly in hole.
The Exploration Co.'s No. 1 Kloh & Rumsey, CEL SE Sec. 39, Blk. 45, Pub. Sch. Ld. Sur. ..... Drilling up sand line 3,875 ft.
The Exploration Co.'s No. 1 J. D. Slator, C SW Sec. 10, Blk. 45, T. & P. Twp. 1-S Sur. ..... Spudding 300 ft.
Liano Oil Co.'s No. 1 E. P. Cowden, Sec. 5, Blk. B-14, Public Sch. Sur. ..... Drilling 3,800 ft.

FISHER COUNTY

Baldridge, Dillard & Clark's No. 1 Weier ..... Drilling 350 ft.

Ideal Oil Co.'s No. 1 W. F. Martin, NW NW Sec. 113, Blk. 1, T. & T. C. Sur. ..... Straightreaming 5-in., 3,490 ft.
R. W. Raney's No. 1 Maberry, Sec. 56, T. & P. Sur. ..... Building standard rig to drill deeper, total depth 1,550 ft.

GLASSCOCK COUNTY

Mascho & Marland Oil Co.'s No. 1 Calder, C NW Sec. 20, Blk. 32, T. & P. Twp. 4-S Sur.... Shut down 2,135 ft. for casing.
Plateau Oil Co.'s No. 1 L. S. Bell, C SW Sec. 11, Blk. 35, T. & P. Twp. 5-C Sur. ..... Drilling 1,680 ft.

HOCKLEY COUNTY

El Captain Oil Co.'s No. 1 Ellwood ..... Drilling 1,600 ft.

HOWARD COUNTY

Gulf Production Co.'s No. 1 Otis Chalk..... Drilling 380 ft.
Humble Oil & Refining Co.'s No. 1 Douthitt, NW NW Sec. 123, Blk. 29, W. & N. W. Sur. .. Underreaming casing 975 ft.
Lockhart & Co.'s No. 1 Roberts, SW SW Sec. 97, Blk. 29, W. & N. W. Sur. ..... Drilling 1,130 ft.
Lockhart & Co.'s No. 1 Hyman (Scott), Sec. 86, Blk. 29, W. & N. W. Sur. ..... Drilling 2,450 ft.
Magnolia Petroleum Co.'s No. 2-A Otis Chalk, NE SW Sec. 114, Blk. 29, W. & N. W. Sur. ... Swabbing 100 bbls. 1,581-99 ft.
Marland Oil Co.'s No. 1-A Otis Chalk ..... Building rig.
Marland Oil Co.'s No. 2-A Otis Chalk ..... Building rig.
Marland Oil Co.'s No. 4 Otis Chalk, SE SE Sec. 113, Blk. 29, W. & N. W. Sur. ..... Drilling 1,333 ft.
Marland Oil Co.'s No. 5 Otis Chalk ..... Rigging up.
Reeves, Apperman and others' No. 1 H. R. Clay, NE SE SE Sec. 136, Blk. 29, W. & N. W. Sur. ..... Underreaming 8-in. 1,040 ft., hole full of water.

JEFF DAVIS COUNTY

Humble Oil & Ref. Co.'s No. 1 W. W. McCutcheon, Sec. 31, Blk. 244, G. C. & S. F. Sur. Drilling 3,400 ft.
J. K. Hughes Dev. No. 1 J. Z. Means, M. Robertson-3 Sur. ..... Fishing tools 640 ft.

JONES COUNTY

Atlantic Oil Prod. Co. and others' No. 1 Howe.. Drilling 935 ft.
Gibson & Johnson's No. 1 Mrs. J. V. Wright .. Shut down 1,300 ft.
Gillette & Hickey's No. 1 S. W. King ..... Slight show of oil and gas 1,588-90 ft., drilling 1,730 ft.
Gillette & Hickey's No. 1 M. E. Young ..... Drilling 820 ft.
Hurley Oil Co. and others' No. 1 J. Sears ..... Drilling 2,210 ft.
Marland Oil Co.'s No. 1 S. R. Cox ..... Fishing 2,410 ft.
Marland Oil Co.'s No. 2 Mason ..... Rig.
Marland Oil Co.'s No. 1 Mason ..... Drilling 660 ft.
Midwest Exploration Co.'s No. 1 Thornton .... Drilling 2,405 ft.
Victor H. Martin's No. 1 Culbertson ..... Spudding.
Muse & Robertson's No. 1 Manly ..... Rigging up machine.
Phillips Petroleum Co.'s No. 1 Walling ..... Drilling 2,250 ft.
Phillips Petroleum Co.'s No. 2 Winters..... Drilling 220 ft.
Shaw & Rathke and others' No. 1 Bristow .... hut down at 500 ft.
Leigh Tallaferro's No. 1 King ..... Shut down 2,186 ft.
J. C. Yancey and others' No. 1 Herndon ..... Spudded and shut down.
J. C. Yancey and others' No. 1 Powell ..... ' ...dded and shut down.
World Oil Co.'s No. 1 Staniforth ..... Rig.
Zeigler and others' No. 1 Reeves ..... Drilling 610 ft.

KENT COUNTY

The Texas Company's No. 1 Barron, C NW Sec. 131, Blk. G, W. & N. W. Sur. ..... Shut down 4,362 ft.

KIMBLE COUNTY

Dixie Oil Co.'s No. 1 Harrison, 900 ft. N NE 40 cor. S 300 ft., No. 80 Sur. ..... Drilling 1,420 ft.

LAMB COUNTY

S. C. Mars and others' No. 1 Yellowhouse..... Standardizing 1,724 ft. and ready to start drilling.

LOVING COUNTY

Lockhart & Co.'s No. 1 R. L. Allen, NE NW Sec. 82, Blk. 33, H. & T. C. Sur. ..... Drilling 4,110 ft.

LYNN COUNTY

The Hart Oil Corp.'s No. 1 C. O. Edwards, NW NW Sec. 5, Blk. 2 ..... Shut down 1,400 ft.

MENARD COUNTY

J. R. Lewis and others' No. 1 White, C NW Sec. 8, J. Mabrey Sur. ..... Shut down 150 ft.

MITCHELL COUNTY

Texas & Stivers' No. 1 Pardee, SE SE Sec. 85, Blk. 97, H. & T. C. Sur. ..... Fishing casing 485 ft., will skid.
B. H. Cogdell's No. 1-C F. E. McKenzie, WL NW NE Sec. 226, Blk. 1-A, H. & T. C. Sur.... Shut down 125 ft.
Owen & Sloan's No. 1 C. P. Conoway, C NE Sec. 30, Blk. 25, Twp. 1-S Sur. ..... Slight show of oil 3,183-85 ft., shut down 3,205 ft., may deepen.
Magnolia Petroleum Co.'s No. 2 Foster, NE NE Sec. 17, Blk. 29, T. & P. Sur. ..... Fishing 1,510 ft.
Magnolia Petroleum Co.'s No. 1 G. W. Wemack ..... Fishing 2,104 ft.
Morrison & Thompson's No. 1 Griffin ..... Drilling 320 ft.
F. P. Zoch and others' No. 1 J. J. Ford, C SW Sec. 130, Blk. 3, H. & G. N. Sur. ..... Shut down 3,082 ft., contract completed.

NOLAN COUNTY

Zweifel and others' No. 1 Longbotham ..... Spudded and shut down.

PECOS COUNTY

Benedum & Trees' No. 1 J. C. Trees, C Sec. 50, Blk. 8 ..... Cleaning out 680 ft.
Buell and others' No. 1 Hagan, C N half NE Sec. 89, Blk. OW, G. C. & S. F. Sur. ..... Running 12-in. 575 ft.
Kemper Kimberlin's No. 1 Blackman, C NW Sec. 24, Blk. 3, H. & T. C. Sur. ..... Spudded and shut down 100 ft.
Mid-Kansas-Transcontinental's No. 1 Yates, 3,900 ft. W of SW cor. Sec. 60, Blk. 1, I. & G. N. Sur. ..... Flowed 100 bbls., 296 degrees oil and 1,000,000 ft. gas 990-97 ft.
Quinby Oil Co.'s No. 1 Townsite, Sec. 1, Blk. 267, Client Addition Sur. ..... Underreaming 6-in. 3,307 ft.
Quinby Oil Co.'s No. 2 Bennett, C NW Sec. 592, Blk. 105, G. C. & S. F. Sur. ..... Drilling 380 ft.

PRESIDIO COUNTY

Headlock & Miller's No. 1 Tootle estate, SE SW Sec. 123, Blk. 5, D. P. R. R. Sur. ..... Shut down 2,340 ft.

REAGAN COUNTY

California Co.'s No. 3 University, SE NW Sec. 14, Blk. 7, University Sur. ..... Running 12-in. at 735 ft.
H. D. Camp and others' No. 1 University, CWL NE NW Sec. 34, Blk. 11, University Sur. ..... Shut down 2,786 ft.
Hiawatha Oil Co.'s No. 1 University ..... Spudding.
Marland-Texon Oil Co.'s No. 1 Sawyer, SE NE Sec. 154, Blk. 1, T. & P. Sur. ..... Drilling 3,100 ft., hole full sulphur water 2,885 ft.
Moody Oil Corp.'s No. 1 Sawyer, C Sec. 150, Blk. 1, T. & P. Sur. ..... Top salt 1,240 ft., fishing bailer 1,460 ft.
Roxana Petroleum Corp.'s No. 1 Boyd, NE SW Sec. 15, Blk. F, University Sur. ..... Hole full sulphur water 3,165-74 ft., shut down for orders.

REEVES COUNTY

Deep Rock Oil Co.'s No. 1 Caldwell ..... Rigging up.
Schooler, Slack and others' No. 1 Abram, NE SE SE Sec. 31, Blk. 57, T. & P. Twp. 2 Sur.... Shut down 3,500 ft., hole full sulphur water, contract complete.
Grisham & Hunter's No. 1 State Land, C NW NW Sec. 33, Blk. 55, Pub. Sch. Ld. Sur..... Drilling 2,100 ft.
World Oil Co.'s No. 1 Biggs, C SE Sec. 65, Blk. 112, Pub. Sch. Ld. Sur. ..... Drilling 485 ft.

RUNNELS COUNTY

Red Bank Oil Co.'s No. 1 Fowler, CWL NW Sec. 514, J. H. Wills Sur. ..... Shut down 1,835 ft.
Frank Yaes' No. 1 R. M. McMillan ..... Moving in material.
F. P. Zoch and others' No. 1 Bruce ..... Rerunning casing 1,530 ft.

SCHLEICHER COUNTY

Beavers & Leath and others' No. 1 J. A. and W. T. Whitten, C NW Sec. 35, Blk. 11, T. O. Sur. ..... Spudded and shut down.
Cops & Dalton's No. 1 Sol Meyer, C SW Sec. 99, Blk. 5, E. L. R. R. Sur ..... Drilling 2,550 ft.

SCURRY COUNTY

Northwest Co.'s No. 1 T. C. Stinson ..... Recementing 12-in. at 665 ft.

STERLING COUNTY

California Co.'s No. 1 Davis, SW NE Sec. 255, Blk. 2, H. & T. C. Sur. ..... Drilling 1,270 ft.
Co-Operative Lease & Dev. Co.'s No. 1-A E. W. Douthitt, SW SE SE Sec. 173, Blk. 29, W. & N. W. Sur. ..... Shut down for orders 3,333 ft.

The Exploration Co.'s No. 1 C. A. Boone, C NW Sec. 21, Blk. 11, S. P. Sur. ..... Shut down 3,200 ft. for orders.
J. W. Gilliam's No. 1 Clark ..... Spudded and shut down.

TAYLOR COUNTY

City of Abilene's No. 1 fee ..... Drilling 1,875 ft.
Sanger Oil & Refining Co.'s No. 1 R. E. Anderson ..... Shut down 1,916 ft.
Sanger Oil & Refining Co.'s No. 2 R. E. Anderson ..... Shut down 2,155 ft.
Sanger Oil & Refining Co.'s No. 1 Cox..... Drilling 1,800 ft.
Sanger Oil & Refining Co.'s No. 1 Gillespie.... Rigging up.

TERRELL COUNTY

Sun Oil Co.'s No. 1 Scott, C NE Sec. 12, Blk. R, T. C. Sur. ..... Drilling 2,800 ft.
E. T. Williams and others' No. 1 Robertson, C NE Sec. 71, Blk. D-10, T. C. Sur. ..... Shut down for underreaming 2,800 ft., hole full of water.

TERRY COUNTY

Kingsland Oil & Potash Co.'s No. 1 Brownsfield ..... Spudded and shut down.

TOM GREEN COUNTY

M. D. Bryant and others' No. 1 Llano Co. Sch. Ld., SE NW Sec. 13, Llano Co. Sch. Ld. Sur. ..... Cementing casing at 2,980 ft.
Texon Oil & Land-Marland's No. 2 Sorrell, C S half Sec. 265, Christian Mance Sur. ..... Underreaming casing 1,110 ft., total depth 1,290 ft.
World Oil Co.'s No. 1 Pulliam, NW SE SW Sec. 18, Blk. 4, H. & T. C. Sur. ..... Repairing engine at 3,580 ft.

UPTON COUNTY

Atlantic Oil Prod. and others' No. 1 Sherk, NE cor. SW Sec. 35, Blk. 1, M-K-T Sur..... Drilling 700 ft.
Dixie Oil Co.'s No. 9 Burleson, Sec. 100, T. C. Jones Sur. ..... Top salt 640 ft., top pay 2,236, 300 ft. water per hour 2,350 ft., will plug.
Dixie Oil Co.'s No. 10 Burleson, Sec. 100, T. C. Jones Sur. ..... Top salt 610 ft., drilling 2,180 ft.
Dixie Oil Co.'s No. 11 Burleson, Sec. 11, T. C. Jones Sur. ..... Drilling 510 ft.
Dixie Oil Co.'s No. 12 Burleson ..... Rig.
Dixie Oil Co.'s No. 8 Hughes, Sec. 4, William Teer Sur. ..... Drilling 1,825 ft.
Dixie Oil Co.'s No. 9 Hughes, Sec. 4, William Teer Sur. ..... Top salt 470 ft., drilling 1,420 ft.
Dixie Oil Co.'s No. 10 Hughes, Sec. 4, William Teer Sur. ..... Drilling 675 ft.
Dunning and others' No. A-2 McElroy, C SW Sec. 155, Blk. E ..... Moving in rig.
Dunning and others' No. A-1 McElroy, C NW Sec. 134, Blk. E ..... Moving in rig.
Gulf Production Co.'s No. 1 J. H. Sherk-E, SW cor. NE Sec. 35, Blk. 1, M-K-T Sur. ..... Top salt 758 ft., drilling 1,755 ft.
Hults and others' No. 1 Giddings, C NW Sub. Sec. 12, Wash County R. R. Sur. ..... Spudded and shut down for fuel.
Humble Oil & Refining Co.'s No. 5 A. S. Burleson, NW NW Sec. 100, T. C. Jones Sur.. Drilling 2,010 ft.
Independent Oil & Gas Co.'s No. 5 A. S. Burleson, Sec. 100, T. C. Jones Sur. ..... Top salt 597 ft., small show of oil 2,266 ft., shut down 2,300 ft.
Independent Oil & Gas Co.'s No. 6 A. S. Burleson, Sec. 100, T. C. Jones Sur. ..... Shut down 360 ft.
Independent Oil & Gas Co.'s No. 5 Emma Wooley, Blk. 3, G. C. & S. F. Sur. ..... Top salt 495 ft., drilling 1,215 ft.
Independent Oil & Gas Co.'s No. 6 Emma Wooley, Blk. 3, G. C. & S. F. Sur. ..... Rigging up.
Independent Oil & Gas Co.'s No. 7 Emma Wooley, Blk. 3, G. C. & S. F. Sur. ..... Spudded 15 ft.
Independent Oil & Gas Co.'s No. 8 Emma Wooley, Blk. 3, G. C. & S. F. Sur. ..... Drilling 100 ft.
Kirkwood and others' No. 1 Rankin, Sec. 100, T. C. Jones Sur. ..... Total depth 3,950 ft., plugged back to 3,936 ft., running 6-inch. to 3,820 ft. to test gas show.
Marland Oil Co.'s No. 1 Estep, Sec. 18, Blk. 3, M-K-T Sur. ..... Plugging back from 2,396 ft. to 2,336 ft.
Marland Oil Co.'s No. 2 Estep, Sec. 18, Blk. 3, M-K-T Sur. ..... Plugging back from 2,364 ft. to 2,332 ft.
Marland Oil Co.'s No. 3 Estep, Sec. 18, Blk. 3, M-K-T Sur. ..... Made 56 bbls. Saturday.
Marland Oil Co.'s No. 4 Estep, Sec. 18, Blk. 3, Plugging back from 2,372 ft. to 2,322 ft.
Marland Oil Co.'s No. 7 Estep, Sec. 18, Blk. 3, M-K-T Sur. ..... Plugged back from 2,338 ft. to 2,326 ft.
Marland Oil Co.'s No. 8 Estep, Sec. 18, Blk. 3, M-K-T Sur. ..... Drilling 2,000 ft.
Marland Oil Co.'s No. 9 Estep ..... Shut down for orders.
Marland Oil Co.'s No. 3 Burleson ..... Total depth 2,168 ft., straightening hole.
Marland Oil Co.'s No. 1 Shirley, SW SW Sec. 10, Blk. 3½, C. C. S. D. & R. G. N. G. Sur.... Drilling 960 ft.
Marland Oil Co.'s No. 1 Powell ..... Straightening hole 600 ft.
Marland Oil Co.'s No. 1 Reese ..... Straightening hole 585 ft.
Marland Oil Co. & Texon's No. 1 Halff, C SE Sec. 62, Blk. Y, C. C. S. D. & R. G. N. G. Sur. ..... Drilling 3,475 ft.
Rio Grande Oil Co.'s No. 1 Estep ..... Drilling 1,610 ft., top salt 705 ft.
Roxana Petroleum Corp.'s No. 4 Della Bowen.. Building rig.
Roxana Petroleum Corp.'s No. 2 Hughes, Sec. 4, William Teer Sur. ..... Top salt 515 ft., drilling 2,040 ft.
Roxana Petroleum Corp.'s No. 3 Hughes, Sec. 4, William Teer Sur. ..... Drilling 1,400 ft.
Roxana Petroleum Corp.'s No. 4 Hughes, Sec. 4, William Teer Sur. ..... Top salt 660 ft., drilling 1,820 ft.
Roxana Petroleum Corp.'s No. 2 Estep, SE cor. SW Sec. 18, Blk. 3, M-K-T Sur. ..... Top salt 625 ft., drilling 2,330 ft., no oil.
Roxana Petroleum Corp.'s No. 3 Estep, C NE SE SE, Sec. 18, Blk. 3, M-K-T Sur. ..... Top salt 650 ft., drilling 2,340 ft., no oil.
Roxana Petroleum Corp.'s No. 4 Estep ..... Rigging up.
Roxana Petroleum Corp.'s No. 5 Estep ..... Rigging up.
Sartain & Davis' No. 1 Bull, SW NE, Sec. 48, Blk. 41, T. & P. Sur. ..... Drilling 2,450 ft.
Skelly Oil Co.'s No. 1 Jones ..... Hole full salt water 3,490-95 ft., fishing 3,595 ft.
The Texas Company's No. 5 R. King, SE SW Sec. 11, Blk. 3½, C. C. S. D. & R. G. N. G. Sur. ..... Top salt 470 ft., drilling 2,160 ft.
Texas Pacific Coal & Oil Co.'s No. 3 Sherk, Sec. 5, Blk. 3, M-K-T Sur. ..... Top salt 550 ft., drilling 1,155 ft.
Texon Oil & Land Co.'s No. 1 Sherk, Sec. 35, Blk. 1, M-K-T Sur. ..... Spudding 100 ft.
Johnston & McCamey & Union Land Co.'s No. 1 Union Land Co., SW cor. Sec. 21, Blk. 1, M-K-T Sur. ..... Spudded 10 ft. and shut down for water.

VAL VERDE COUNTY

A. Blume and others' No. 1 Moore estate, Sec. 183, J. Mitchell Sur. ..... Resetting casing 2,675 ft.
Curso Williams' No. 1 Holman, NE NE Sec. 5, Blk. N, G. H. & S. A. Sur. ..... Drilling 670 ft., slight show of oil.
Douglas Oil Co.'s No. 1 Sellars ..... Spudded 150 ft.
East Del Rio Oil Co.'s No. 1 Russell, E cor. Sec. 183, Del Rio Town Sur. ..... Drilling 3,000 ft.
Hiawatha Oil Co.'s No. 1 Sellers, C Sec. 1,031, Blk. A, I. & G. N. Sur. ..... Spudding 200 ft.
Independent Operators' No. 1 Whitehead, SE SE Sec. 30, Blk. 4, I. & G. N. Sur. ..... Shut down 3,750 ft.
Transcontinental Oil Co.'s No. 1 W. S. Stevenson, NE SE NE Sec. 3, Blk. 4, I. & G. N. Sur. ..... Fishing for tools 2,210 ft.

WINKLER COUNTY

McCullough Oil Co.'s No. 1 Tobe Martin, CEL Sec. 20, Blk. B-12 ..... Rig.
R. S. Matthews and others' No. 1 State, C Sec. 7, Blk. A-57, Pub. Sch. Ld. Sur. ..... Running 10-in. 1,025 ft.
F. P. Zoch and others' No. 1 John Sealy, C SW Sec. 73, Blk. A, Pub. Sch. Ld. Sur..... Skidding rig, total depth 200 ft.
L. D. Ladd, Hill and others' No. 1 Amburgey, C Sec. 24, Blk. B-7, Pub. Sch. Ld. Sur..... Fishing tools 700 ft.
Westbrook & Eastland Oil Co.'s No. 1 Hendricks, SE SE Sec. 42, Blk. B-5, Pub. Sch. Ld. Sur. ..... Top fourth pay 2,965 ft., started filling up with 29 gravity oil at 3,992 ft.; Nov. 4, flowed 65 bbls.; Nov. 5, 55 bbls., agitated; drilled to 3,006 ft., no water; flowing every 4 hours estimated 200 bbls. as it stands.

CRUDE OIL PRICES

(Continued from Page 145)

Other grades from "28° to 28.9°" to "52° and above", inclusive, same as Humble Oil & Refining Co. schedule in north Texas.

Cotton Valley	1.20
Bellevue (Sept. 16)	1.40
Smackover, below 24°	1.10
24° to 24.9°	1.35
25° to 25.9°	1.40
26° to 26.9°	1.45
27° and above	1.50
*Stephens, Ark., (November 5)	
Below 28°	$1.30
28° to 28.9°	1.40
29° to 29.9°	1.45
30° and above	1.50
†Calion (East El Dorado)	1.10
‡Urania (August 26)	1.10

Other companies posting in these fields are: Gulf Refining Co.; Atlantic Oil Producing Co. in Homer, Haynesville, El Dorado and Smackover; The Texas Company in Caddo, Bull Bayou, DeSoto, Crichton and Smackover; and Magnolia Petroleum Co. in Haynesville, Bull Bayou, El Dorado, Pine Island, Cotton Valley and Smackover. Prices of The Texas Company and the Magnolia Petroleum Co. effective November 5; others November 4.

*Posted by the Atlantic Oil Producing Co. †Posted by the Gulf Pipe Line Co. ‡Posted by the Louisiana Oil Refining Corp.

ROCKY MOUNTAIN STATES
Ohio Oil Co.—Midwest Refining Co.
(Effective May 17)

Rock Creek (Wyo.)	$2.25
Salt Creek—	
29° to 29.9°	1.73
30° to 30.9°	1.81
31° to 31.9°	1.89
32° to 32.9°	1.97
33° to 33.9°	2.05
34° to 34.9°	2.13
35° to 35.9°	2.21
36° to 36.9°	2.29
37° and above	2.37
Big Muddy	2.25
Mule Creek	1.75
Grass Creek, light	2.40
Grass Creek, heavy	.90
Elk Basin	2.40
Lance Creek	2.40
Rex Lake	1.45
Byron (Feb. 2)	2.25
Osage	2.40
Lost Soldier (Contract)	1.65
Greybull-Torchlight	2.15
Hamilton Dome	1.35
Cat Creek (Mont.)	2.40
Sunburst (Mont.) (Oct. 5)	1.35
Florence (Colo.)	1.60
Artesia	1.95
Hogback (N. Mex.)	2.45

Note: Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

EASTERN STATES
Joseph Seep Purchasing Agency
(Effective July 8)

Penna Grade Oil in New York Transit Lines (New York)	$3.30
Bradford District Oil in National Transit Lines (Pennsylvania)	3.40
Penna Grade Oil in National Transit Lines (Pa.)	3.30
Penna Grade Oil in Southwest Pa. Lines (West Virginia)	3.30
Penna Grade Oil in Eureka Pipe Line Lines (Pa.)	3.25
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	3.05
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) (May 17)	2.40
Corning Grade Oil in Buckeye Pipe Line Lines (Ohio) (May 22)	2.55
Somerset Medium Oil in Cumberland Pipe Line Lines (Kentucky) (May 17)	2.50
Somerset Light Oil in Cumberland Pipe Lines (Kentucky) (May 17)	2.65
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky) (May 19)	1.25
Gaines (Pennsylvania)	2.85
Keister (Pennsylvania) (Oct. 16)	2.05

MIDDLE WESTERN STATES
Ohio Oil Co.
(Effective May 17)

Lima	$2.48
Wooster	2.55
Illinois	2.37
Indiana	2.25
Princeton	2.37
Plymouth	1.90
Waterloo	1.35
*Western Kentucky (Sept. 9)	2.10
†Cumberland, Barren and Monroe Counties, Ky. (May 17)	2.65
‡Oil in lines of Stoll Oil Refg. Co. in Oil City, Ky.	2.65
‡Oil in lines of Stoll Refg. Co. in Tinsley Bottom, Tenn.	2.46
§Oil Springs (Canada) (May 18)	2.95
§Petrolia (Canada) (May 18)	2.88

*Posted by Indian Refining Co.
†Posted by Paragon Development Co.
‡Posted by Stoll Oil Refining Co.
§Posted by Imperial Oil Co., Ltd.

MEXICO
(Effective May 13)

*Tuxpam light (f.o.b. Mex. ports)	$1.35
†Panuco heavy (f.o.b. Mex. ports)	1.15
Tuxpam (New York)	2.15
Panuco (New York)	1.80

*Plus 32.328c tax. †17.631c tax.

OIL TAX BILL DEFEATED

The ad valorem oil tax bill, Petition 89, voted on at the general election in Oklahoma on November 2, was defeated by a majority so large that when all the returns are in it is expected it will be beaten by 100,000 votes.

GROUP 3 REFINED MARKETS FAILS TO HOLD

(Continued from Page 28)

However, it is generally felt among the trade that the inactive and weak refined markets throughout the Mid-Continent are due more to the unsettled crude situation than to anything else, and as soon as a definite crude price is established there will be a pickup in the refinery position. It is believed that the only existence of the duo crude schedule among the major purchasers is causing the refined market to sag and not the crude cuts in themselves.

It still is the general opinion that refinery markets had more than discounted the crude reductions and that if all major buyers had adopted the cut buyers perhaps would have been ready to enter the market believing conditions stabilized and as a result prices would have remained at least steady. The uncertainty as to the crude situation is given as the principal reason for the inactivity and consequent softening.

Refinery Review

Some light is thrown on the refinery situation by the monthly report of The Oil and Gas Journal showing crude runs to stills on the first day of the month. This review, on another page of this issue, places the refinery throughput in the Mid-Continent at 417,575 bbls., an increase of approximately 9,000 bbls. over the report of October 1.

In the face of declining refinery markets during October and the generally soft situation it had been expected that runs would have been reduced. But it can be seen that Mid-Continent refiners are producing as much and a little more than they did a month ago when prices were even higher than now.

Whether this is an indication of the trend of operations for November remains to be seen. Ordinarily runs on the first day of the month give a fairly accurate picture of what the daily average will be for at least the first 15 days. However, this time the crude price reductions the first week of the month may have a tendency to cause refiners to store crude rather than run it to stills.

Gasoline and Naphtha

As a result of the generally slower demand and free competition from other areas of the Mid-Continent, all grades of Oklahoma gasoline were available Tuesday from a quarter to a half-cent below quotations of a week ago, the past week being marked by an increasing weakness in these products. U. S. Motor (58-60 437) gasoline was moved for resale at 9 cents with some refiners able to get 9½ cents from the trade. Lower grades of gasoline virtually were off the market, although naphtha was tight due to the few refiners making it.

Higher gravity gasolines also were weak. These products a week ago were showing a firmer tone due to a steady demand and some export buying but Monday and Tuesday of this week prices were sagging materially with 64-66 375 being offered from 10½ to 10¾ cents and 60-62 400 from 10 to 10¼ cents.

Natural Gasolines

Natural gasolines were somewhat tighter, particularly Grade C, which was held from 8⅝ to 8¾ cents. Buyers Monday and Tuesday were having difficulty finding this material despite the fact that inquiries and orders were not active. The B grades could not be shaded from 8¾ to 9 cents and the A grades from 9¼ cents but the latter two grades were easier than Grade C. Natural gasolines were the only Oklahoma product which showed advances during the week.

Kerosene and Distillates

Both kerosene and distillates were soft with demand light. This was reflected more particularly in distillate prices which were off Tuesday around a quarter cent. Due to the warmer weather of the past few weeks and to the fact that distributors seemed fairly well supplied there has been comparatively little call for distillates at Oklahoma refineries. As a result stocks have been accumulating and refiners now seem to be resorting to cutting prices to move their material. Some quotations as low as 5 cents on 38-40 straw material were made Tuesday and 5¼ cents seemed an easy figure. However, the cold wave which is sweeping the northern and middle western states, is expected to have a very beneficial effect on the situation by reducing distributors' storage to a point that they will have to enter the market again. Some 36-38 straw distillate was quoted out of north Texas on a basis of 4¾ cents Tuesday.

Kerosene was featureless and as with distillates suffered market declines with 41-43 water white material available at 6½ to 6⅝ cents and 42-44 water white at 6⅞ to 7 cents.

Fuel Oil and Gas Oil

Gas oil was unchanged during the week but fuel oil was fractionally lower on some grades. Although there still is not a great deal of surplus fuel oil readily available the market, due to the inactive demand, is very soft. Lower grades of fuel oil ranged from $1.20 to $1.25 with 24-26 at $1.27½ to $1.32½, and 26-28 at $1.35 to $1.40.

Lubricants and Wax

There was very little change in lubricating oils and wax. Lubricants moved in fair volume and prices were steady. Wax showed no improvement and was extremely dull.

NOMINATIONS FOR A. P. I. DIRECTORS ARE REQUESTED FROM COUNCILLORS

General Secretary R. L. Welch has sent to the Board of Councillors of the American Petroleum Institute requests that they submit nominations for vacancies on the board of directors of the institute to be filled on the opening day of the annual meeting in Tulsa.

The Pacific Coast production group has four representatives on the board of directors: L. P. St. Clair, Independent Oil Producers Agency, Los Angeles, Calif.; F. H. Hillman, Standard Oil Co. of California; Dave S. Ewing, Ethel D. Co., San Francisco, and Mark L. Requa. The terms of all but Mr. Requa expire.

The term of B. B. Brooks, Consolidated Royalty Oil Co., Casper, Wyo., representing the production group in the Rocky Mountains does not expire until 1927.

The production group in the central states is represented by W. S. Farish, Humble Oil & Refining Co., Houston; W. C. Franklin, Tidal Oil Co., Tulsa.; J. D. Collett, O'Keefe & Collett, Fort Worth; Frank Phillips, Phillips Petroleum Co., Bartlesville, and J. Edgar Pew, Sun Oil Co., Dallas. The term of Mr. Farish expires.

Of the two directors representing the production group of the eastern states the term of George W. Crawford, Ohio Fuel Supply Corp., Pittsburgh, expires and that of J. C. Donnell, Ohio Oil Co., Findlay, continues.

In the manufacturing group, the Pacific Coast is represented by H. R. Gallagher, Shell Co. of California, San Francisco, and E. W. Clark, Union Oil Co., Los Angeles. Mr. Gallagher's term expires.

T. A. Dines, Midwest Refining Co., Denver, representing the Rocky Mountain area, holds over until 1927.

The manufacturing group in the Central States is represented by Roy B. Jones, Panhandle Refining Co., Wichita Falls; P. M. Miskell, Empire Refineries, Inc., Tulsa, and F. A. Pielsticker, Skelly Oil Co., El Dorado. The term of Mr. Jones expires.

There are four directors representing the manufacturing group in the Eastern states: R. D. Benson, New York; Edward Prizer, Vacuum Oil Co., New York; B. C. Dawes, Pure Oil Co., Columbus, Ohio, and Charles L. Suhr, Pennzoil Co., Oil City, Pa. The terms of all but Mr. Suhr expire.

In the distribution group the Pacific Coast is represented by K. R. Kingsbury, Standard Oil Co. of California, whose term expires.

The term of E. T. Wilson, Continental Oil Co., Denver, representing the Rocky Mountain group, does not expire until 1927.

The terms of R. W. Stewart, Standard Oil Co. of Indiana and L. V. Nicholas, National Petroleum Marketers Association, expire. That of H. B. Larhart, White Star Refining Co., Detroit, continues.

Of the two representatives of the eastern states the term of Amos L. Beaty, The Texas Company, expires and that of A. P. Coombe, Standard Oil Co. of Ohio, Cleveland, continues.

In the transportation group the term of J. Howard Pew, Sun Oil Co., Philadelphia, representing ships, expires. The term of W. S. Fitzpatrick, Prairie Oil & Gas Co., Independence, Kans., representing pipelines, expires. The term of H. E. Felton, Union Tank Car Co., Chicago, representing tank cars, does not expire until 1927.

The term of W. K. Hughes, Continental Supply Co., St. Louis, representing supply houses, expires.

The term of A. B. Macbeth, Midway Gas Co., Los Angeles, representing the natural gas group, does not expire until 1927. The term of D. E. Buchanan, Chestnut & Smith Corp., Tulsa, does not expire until 1927.

The foreign trade group has three representatives, W. C. Teagle, Standard Oil Co. of New Jersey, (Europe); Herbert L. Pratt, Standard Oil Co. of New York, (Far East), and E. L. Doheny, Pan American Petroleum Co., (Mexico and South America). The term of W. C. Teagle expires.

Directors at Large

Fifteen members of the board of directors represent the industry as a whole: D. M. Folsom, General Petroleum Co., San Francisco; F. B. Henderson, Associated Oil Co., San Francisco; W. G. Skelly, Skelly Oil Co., Tulsa; E. W. Marland, Marland Oil Co., Ponca City; J. F. Lucey, Lucey Petroleum Co., Dallas; George H. Jones, Standard Oil Co. of New Jersey, New York; Wallace Pratt, Humble Oil & Refining Co., Houston; E. C. Lufkin, The Texas Company, New York; Thos. A. O'Donnell, California Petroleum Corp., Los Angeles; W. N. Davis, Mid-Continent Oil and Gas Association, Bartlesville; E. B. Reeser, Barnsdall Corporation, New York; H. F. Sinclair, Sinclair Consolidated Oil Corp., New York; George S. Davison, Gulf Oil Corp., Pittsburgh; J. W. Van Dyke, Atlantic Refining Co., Philadelphia, and Henry L. Doherty, H. L. Doherty & Co., New York.

The terms of D. M. Folsom, F. B. Henderson, W. G. Skelly and E. W. Marland expire. Nominations for these positions will be made by the board of councillors acting as a whole. The procedure has been for each group, geographical or general, to select one councillor from its number to serve on a special committee to recommend nominees for director at large.

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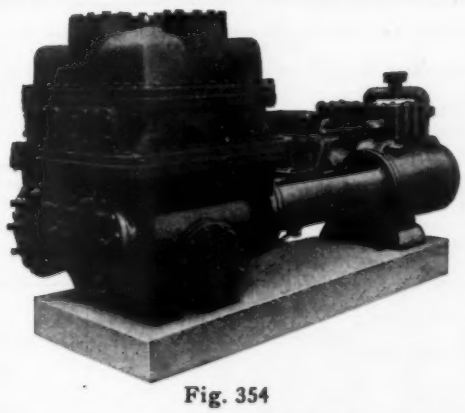

Fig. 354

Fortunate is the man who needs one of these pumps to move his oil, for our largest size will pump 2250 barrels per hour against 200 lbs. line pressure, and that's a lot of oil.

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Refinery Has Unique Pipe Still Unit

Installation at Manhattan Plant Can Be Operated Either With Crude or Fuel Oil. Method of Operation Unusual.

By C. O. Willson

KANSAS CITY, Mo., Nov. 8—At its Kansas City, Kans., refinery the Manhattan Oil Co. of this city has just completed a pipe still installation designed to operate with crude oil as a skimming plant or with fuel oil as a reducing still to secure gas oil.

Pipe stills for some time have been rapidly replacing shell stills in skimming plant operations. Recently there has been a trend toward the installation of pipe stills of a slightly different design to be used in securing from 50 to 75 per cent gas oil from the fuel oil bottoms of the skimming operations. This trend has developed largely because of the increased demand for gas oil as charging stock for cracking plants. The bottoms from this reducing operation are low gravity but are salable as fuel oil.

The Manhattan pipe still was installed primarily to operate in connection with the company's skimming operations. However, the engineering department of the company designed the unit so that by making a minor change in the flow of the liquid and vapors the unit can be operated as a reducing still.

The method of operating the still, as will be explained later, differs somewhat from the usual method of processing in pipe still installations. This is a development of the procedure which the company found successful in the operation of its shell stills before the pipe still was installed.

Shell Still Battery

The company's refinery during the past few years has been enlarged from a small skimmer so that now it is operating on a basis of 6,000 bbls. daily with a crude capacity of 8,000 bbls. daily. This crude previous to the installation of the pipe still was handled by two shell still batteries. One of these batteries has now been replaced by the pipe still.

The shell stills of these two batteries although continuous in their operation are not connected in the conventional manner for this method of operation. In continuous operation, the shell stills of a battery are generally connected in series and operated so that certain fractions of the crude are taken off each still.

A description of one of the crude batteries at the Manhattan plant will explain the operation of both. This battery consists of four 600-bbl. stills with bubble towers as shown in the accompanying photograph. The crude is first charged to a large Griscom-Russell heat exchanger. In this exchanger with fuel oil bottoms as the heating medium the crude is brought to a temperature of at least 350 degrees Fahrenheit. From the exchanger the crude is discharged into a 600-bbl. still which serves as an evaporator. This evaporator is not fired. Operating with crude from the Greenwood field of Kansas, averaging at the plant from 39 to 40 gravity, a 20 per cent gasoline cut is taken overhead. The vapors go directly to the condensers without passing through a tower.

The topped crude in the evaporator is then pumped into the first shell still of the battery. As the still is charged it is also fired and a temperature maintained which removes the remaining gasoline fractions from the crude. This operation continues until the still is charged. It is then fired until all the desired cuts are taken overhead, including naphtha, kerosene, distillate and gas oil. Then the fire is cut and the fuel oil bottoms are pumped out through the heat exchanger.

Operation Continuous

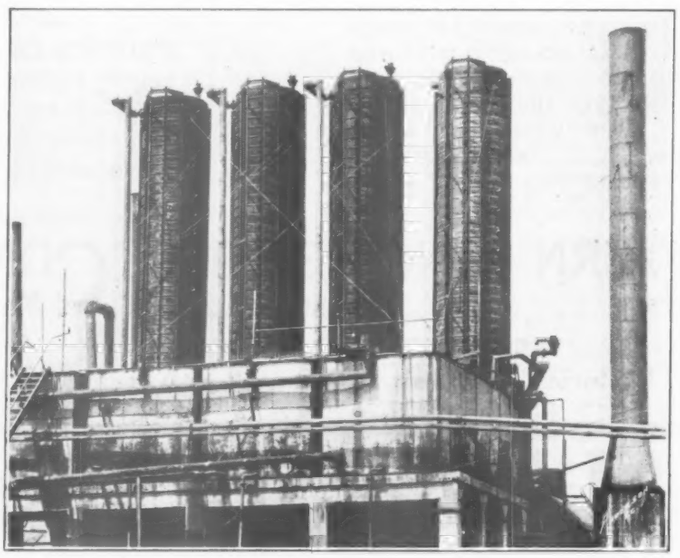
It will be seen that in this method of operation, one shell still including the heat exchanger and evaporator constitute a complete unit which is operated continuously. While the still is being pumped out through the exchanger after all the desired cuts have been taken overhead, the incoming crude charge—also passing through the exchanger—is brought to a high temperature so that a finished gasoline is taken from the evaporator.

Just as soon as the residuum is pumped out of the still the pump out line is closed and the operator starts charging the still with the reduced crude from the evaporator. At the same time steam is introduced into the still and the light fractions start coming over in the receiving house. Thus the unit is always "on stream" from either the still or the evaporator.

The same operating procedure is followed with all four shell stills of the battery. All receive their charge of reduced crude from the same evaporator and all are pumped out through the same heat exchanger. The large capacity of the evaporator gives the flexibility necessary to assure the continuous operation of all four stills.

This arrangement gets away from the objection made to batch or semi-continuous distillation in which it was impossible to utilize the high temperature of the fuel oil bottoms in preheating the incoming crude charge. The company management prefers this method of operation to the usual method of continuous operation because it gives them a better control over their cuts and also because it has enabled them to utilize equipment already installed. The four stills have a solid capacity of 3,000 bbls. daily. Fuel costs are low.

The company has been a pioneer in the developement of a distillate market for home burners and at the present time distributes the bulk of that product consumed in Kansas City, Mo. and Kansas City, Kans. Operating batch after the gasoline has been removed from the crude has enabled the company to make sharp cuts in obtaining kerosenes, distillates and gas oil of any specification required by the trade.



Bubble tower installation at Manhattan refinery. Each tower has 30 sections. Towers are not insulated.

Bubble Towers

The installation of the bubble towers has also been an aid in this method of operating the skimming plant. These towers were built according to company design by the Kaw Steel Construction Co. The four towers shown are 7 feet in diameter and 30 feet high. Each tower has 30 sections. The interesting feature of the installation is the fact that the towers are not insulated and no liquid is charged into the tower in order to secure the desired fractionation. With the large surface exposed to atmospheric conditions enough of the vapor from the still is condensed so that efficient fractionation is obtained through the contact of this liquid and vapors.

The reflux in the towers can either be removed as a finished product or returned to the stills. At the present time only one stream from each tower is taken off as a finished product.

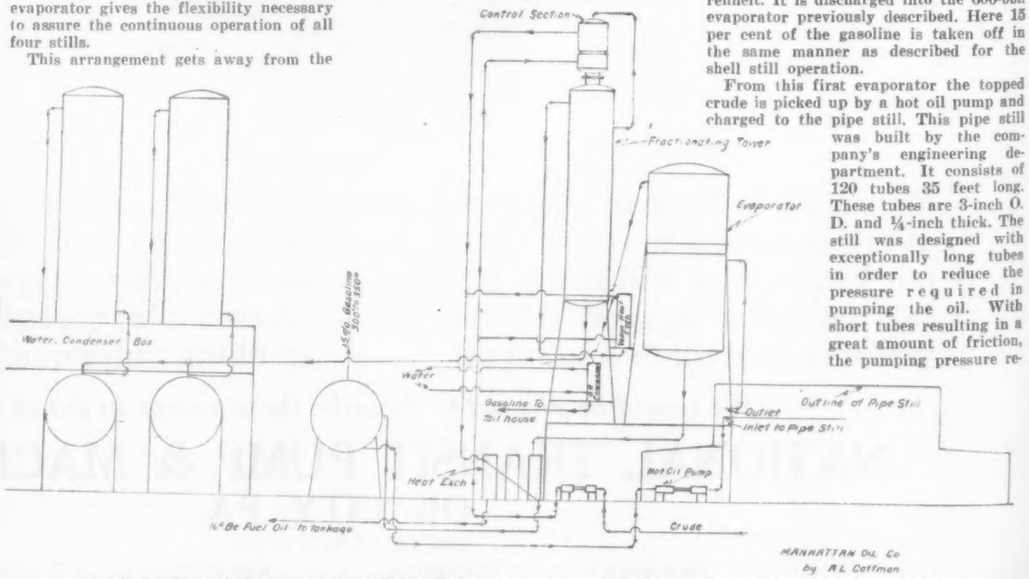
Shell Still Operation

Due to the results obtained with this method of operating the shell stills, the management in designing the new pipe still decided to provide for batch distillation of part of the crude charge after the gasoline had been removed. How this has been accomplished can be determined by following the flow of liquid and vapors as shown in the accompanying sketch of the pipe still and two of the shell stills.

The crude from storage is first pumped through two vapor heat exchangers connected in series. The vapors from the tower is the heating medium for these exchangers. This charging line is designed so that part of the crude charge can be by-passed through the tower dephlegmator if needed. This dephlegmator has an automatic temperature control so that just enough of the crude is allowed to circulate to control the end point of the finished product taken from the tower. This crude after passing through the dephlegmator joins with the crude from the vapor heat exchangers and then passes through three heat exchangers.

The hot oil in these exchangers which are also connected in series, is the fuel oil from the evaporator. The crude on leaving these exchangers has a temperature of approximately 325 degrees Fahrenheit. It is discharged into the 600-bbl. evaporator previously described. Here 15 per cent of the gasoline is taken off in the same manner as described for the shell still operation.

From this first evaporator the topped crude is picked up by a hot oil pump and charged to the pipe still. This pipe still was built by the company's engineering department. It consists of 120 tubes 35 feet long. These tubes are 3-inch O. D. and ¼-inch thick. The still was designed with exceptionally long tubes in order to reduce the pressure required in pumping the oil. With short tubes resulting in a great amount of friction, the pumping pressure re-



Sketch showing main features of pipe still installation at the Kansas City, Kans., refinery of the Manhattan Oil Co.

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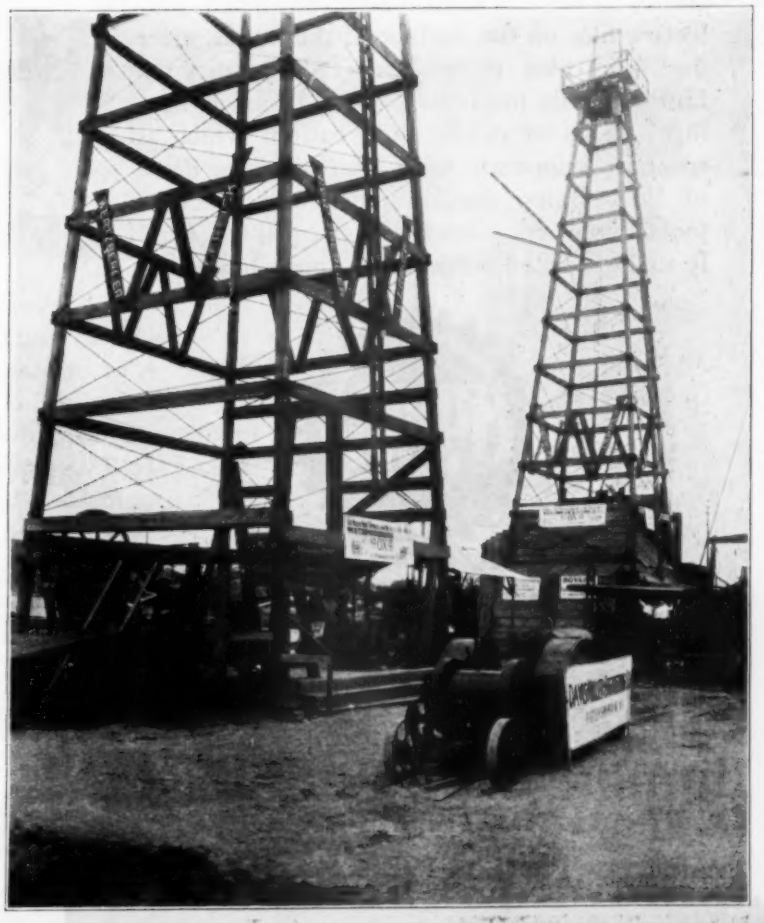

What Happens?

When Your Machinery Starts and Stops

Much of the wear and tear on machinery comes from starting and stopping. For then the fluid film of lubrication is broken, *and unless you are using the right lubricant,* friction takes a heavy toll.

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quired has often been found to present a serious operating problem. In designing the furnace, provision was made for recirculating part of the flue gases and also preheating the air required for combustion. This feature is similar to that being installed at many pipe still installations, including cracking units. It results in a substantial lowering of fuel costs.

Second Evaporation

The crude is brought to a temperature of approximately 750 degrees Fahrenheit in the pipe still before being discharged into the main evaporator of the plant. This perpendicular evaporator is 10 by 22 feet. The evaporator, the bubble tower and the dephlegmator are Southwestern equipment.

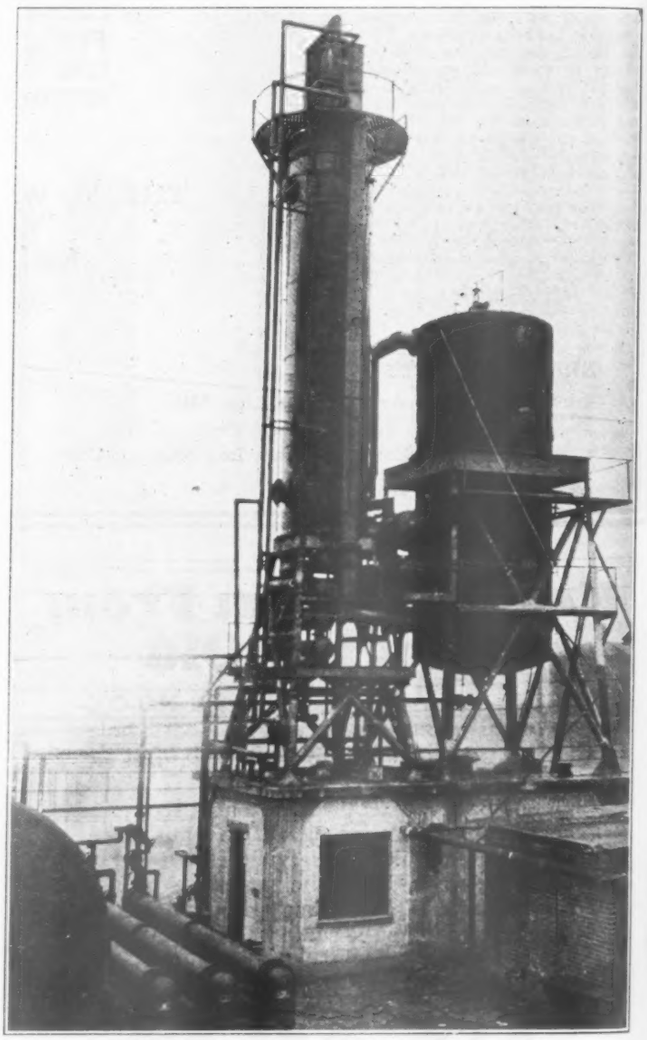
All but about 15 to 20 per cent of the crude charge is evaporated. The bottoms, as previously explained, are pumped to storage through the three heat exchangers. All the vapors pass to the bubble tower. This tower is operated so that only the remaining gasoline vapors are allowed to pass to the condensers. In passing to the water condensers the vapors first pass through the vapor heat exchangers. Water is used as the cooling medium in the condensers.

The reflux in the bubble tower which is termed a "gas oil" contains the kerosene, distillate and gas oil fractions of the crude. It represents approximately 40 per cent of the crude charge. This reflux as shown in the sketch flows by gravity to one of two shell stills.

As this gas oil accumulates in the still, it is fired and the lighter ends removed by batch distillation in the same manner as the topped crude was reduced in the case of the shell still battery. Two of the shell stills are being used for that purpose. After the kerosene and distillate fractions have been taken off the gas oil bottoms are suitable as charging stock for cracking units or salable for other uses.

Other Features

An engineer interested in the detail design of a pipe still would find many interesting features at the Manhattan installation. All control instruments are housed in the building beneath the bubble tower where they are readily accessible to the operator. The pumps are housed in the same building. The crude charging pump is equipped with a Mason regulator which maintains a uniform charge to the still. Just what the ultimate capacity of the unit will be has not yet been determined. It was designed to refine 3,000 bbls.



View of pipe still at Manhattan refinery.

The heat exchangers, vapor heat exchangers and condensers are all equipped with by-passes so that one or more of the units can be replaced or repaired without affecting the operation of the unit. These exchangers and condensers play an important part in the successful operation of the unit and make possible the compactness in design, an outstanding feature of the entire installation.

Operating with Fuel Oil

The unit can be operated with fuel oil by making two changes in connections which were provided for in designing the plant. The fuel oil is charged through the vapor heat exchanger and dephlegmator in the same manner as when crude oil is used. It is not allowed to pass through

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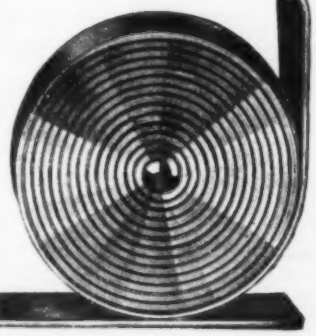

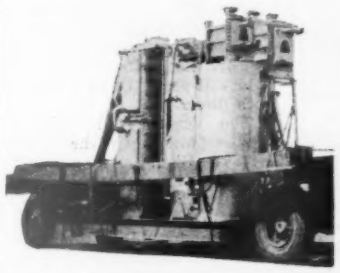

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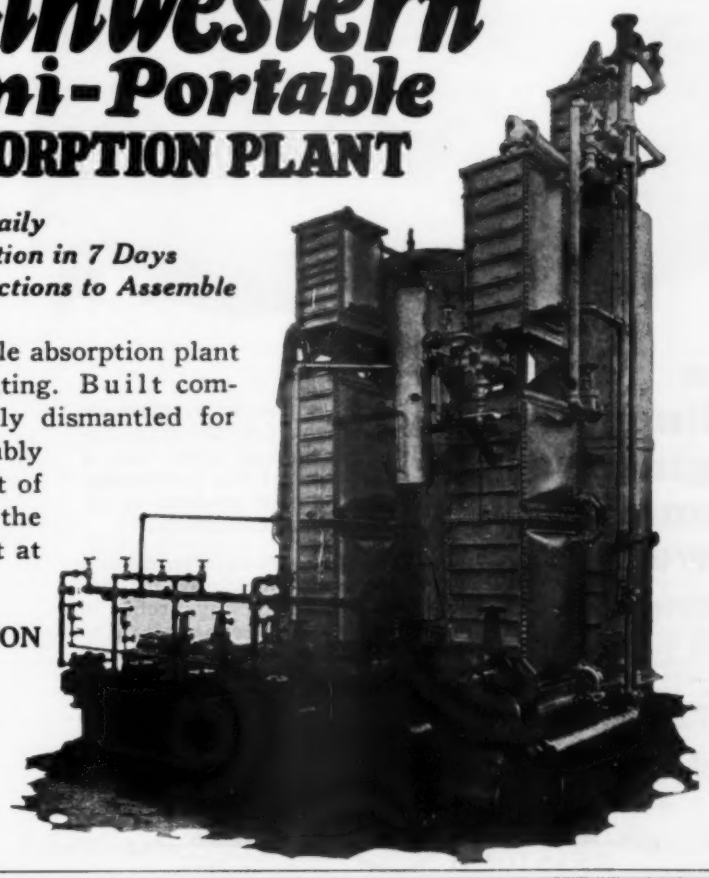

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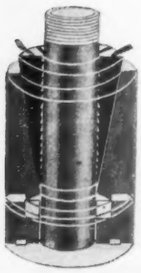

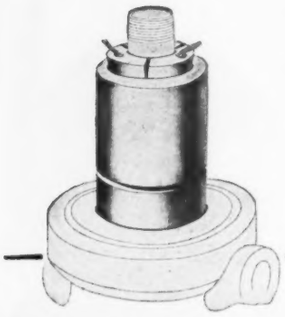

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the first evaporator being pumped direct to the pipe still.

From the second evaporator the vapors pass to the bubble tower and a small amount of gasoline vapor is taken off overhead through the dephlegmator. This vapor by-passes the vapor heat exchangers passing direct to the condensers and the receiving house. The reflux of gas oil from the bottom of the bubble tower is passed through the vapor heat exchanger from there to the receiving house. The fuel oil from the bottom of the second evaporator passes through the heat exchangers, the same as with crude.

VENTURA FIELD IS CONTROLLED RESERVOIR

(Continued from Page 72)

sub-massive grayish blue clay. At the top of the formation are shaly sands which contain a diagnostic Pico fauna. South of Ventura Basin, across the Santa Clara River fault, the Pico formation rests upon pre-Fernando rocks.

Above the Pico formation are two formations aggregating over 4,000 feet in thickness and separated by a distinct unconformity. The lower of these formations is composed chiefly of gray and white sands and occasional gravels. It carries Saugus fossils at its base, and immediately overlying these a succession of San Pedro faunas. The upper formation exposes rusty weathering gravels and yellow sands.

Structure

The structure of Ventura Basin is dominated by a series of overthrust faults approaching major size that overrides it from the north and to a less extent from the south. These, or at least their more vertical inceptions, were active in the Pliocene and Lower Pleistocene epochs, and caused a long, east-west crustal segment to sink rapidly during most of Fernando time. This segment, with its resulting thick sediments, was overridden during the Pleistocene orogenic disturbance by fault blocks to the north and south, which caused the Fernando strata upon the east to be tilted into a steep, continuous monocline; and those upon the west to fold, and form the Ventura anticline.

Ventura Oil Field

The Ventura anticline is approximately 18 miles long and from 3 to 5 miles wide. Its highest part is near the center, from which it plunges gently to the east and west for miles, at angles of 2 or 3 degrees. The flanks of the anticline are somewhat asymmetrical, the truer dips upon the northern or mountainward side ranging from 35 to 55 degrees, and those upon the southern or basinward side from 25 to 45 degrees. This latter element, together with overthrusting, has caused the axis of the productive horizons to lie considerably south of the surface crest.

The Ventura Field, although located upon one of the larger and more nearly perfect closed anticlines of California, had until recently an unusually slow development. For 10 years after the first commercial oil well was completed, exploration continued intermittently, hampered by tremendous gas pressures. Early in 1925, two oil zones, one shallow and one of moderate depth, were producing. In January of this latter year, the Associated Oil Co. succeeded in conquering hitherto baffling gas horizons, and was rewarded by a 4,639-bbl. completion which opened for development a deep zone of large areal extent. As a result of this discovery the daily production of the field has jumped from 8,000 to 50,000 bbls., with the productive territory as yet undefined.

Early Operations

An interest in the economic features of this field was incited many years ago by the discovery of gas seeps in the bed of the Ventura River, which lies across the crest of the structure. Gas was discovered in a first well in 1903. In 1915, the State Consolidated Oil Co. drilled its No. 1 Lloyd 1,500 feet east of several small gas producers, and discovered a small quantity of 50 degrees oil at a depth of about 2,250 feet. The productive parts of this zone total about 1,000 feet in thickness, and furnish a small production of high gravity oils with much water. Only a few wells now produce from this horizon.

In 1918, the Shell Co. of California discovered a second and intermediate oil zone in the first well on its Gosnell lease. This zone is separated from overlying productive strata by the Gosnell shale, and produces oil of around 30 degrees. It has a total thickness of about 1,250 feet, the upper half yielding small quantities of oil and considerable water, and the lower half productions of cleaner oil as high as 1,500 bbls. or more per well.

Associated's Discovery

In January, 1925, the Associated Oil Co. succeeded in overcoming the tremendous gas pressures that hindered deep operations in this field, and brought in its No. 9-A Lloyd, at a depth of 5,150 feet with an initial production of 4,639 bbls. of 30 degrees oil. The development resulting from this discovery has placed the Ventura Field among the major producers of light oil in California, with both its areal extent and deeper possibilities being as yet unknown.

The shallow oil zone of the field appears to cover a limited territory and is more or less water logged. It is for these reasons considered to be of minor importance, and its further exploitation will probably hinge largely on the future price of oil and improvements in mechanical methods.

The intermediate oil zone is not at this time entirely outlined, but recent developments indicate that its productive measures thin or die out not far from the present limits of production. There seems to be no very definite marker between this and the deep oil zone, the chief difference between the two appearing to be the much larger productivity and areal extent of the latter.

The deep oil zone has at this writing been penetrated approximately 1,200 feet below its top. A well flowing 5,610 bbls. from a depth of 6,261 feet has failed to find the bottom of this zone. The areal extent of the horizon is so far unknown. Upon the north and south this will be comparatively limited, because of the steep dips that occur at these localities. Upon the east and west, the gentle plunge of the anticline, combined with the known tendency of oil to extend far down gentle inclinations, makes it hazardous to venture any opinion other than that the field will probably be greatly extended in both directions.

The Ventura Oil Field is controlled almost entirely by the larger operators, with the Shell and Associated Oil companies having particularly extensive reserves. The conservative policy of these companies is an assurance that this important field will be efficiently developed.

Miscellaneous Fields

Several small oil fields occur along the northern edge of the Santa Paula monocline, just south of the Sulphur Mountain overthrust fault. Two of these are located at the heads of Adams and Wheeler Canyons, and a third upon the west side of Santa Paula Canyon (see map). The production is from shallow wells penetrating crushed strata at the base of the exposed Santa Paula sediments.

The Sisar Creek Field just north of the great San Cayetano overthrust fault has produced oil for many years from shallow wells drilled in overturned Sespe strata. Other small and sporadic production has been secured in nearby areas exposing strata of pre-Fernando age. The geology and oil fields of this general territory have been described in detail by Eldridge.

The South Mountain Oil Field is not in Ventura Basin, but lies south across the profound Santa Clara River fault. The geology of this field has been described by Hudson who, in collaboration with Taliaferro and Craddock published the first comprehensive view of the geology of southwestern Ventura County. The South Mountain Oil Field was discovered in 1916, is domal in structure, and apparently produces from the Sespe formation. According to Hudson, the total production of oil at the end of the year 1922 had amounted to 4,655,000 bbls. As the field has been producing ever since, the

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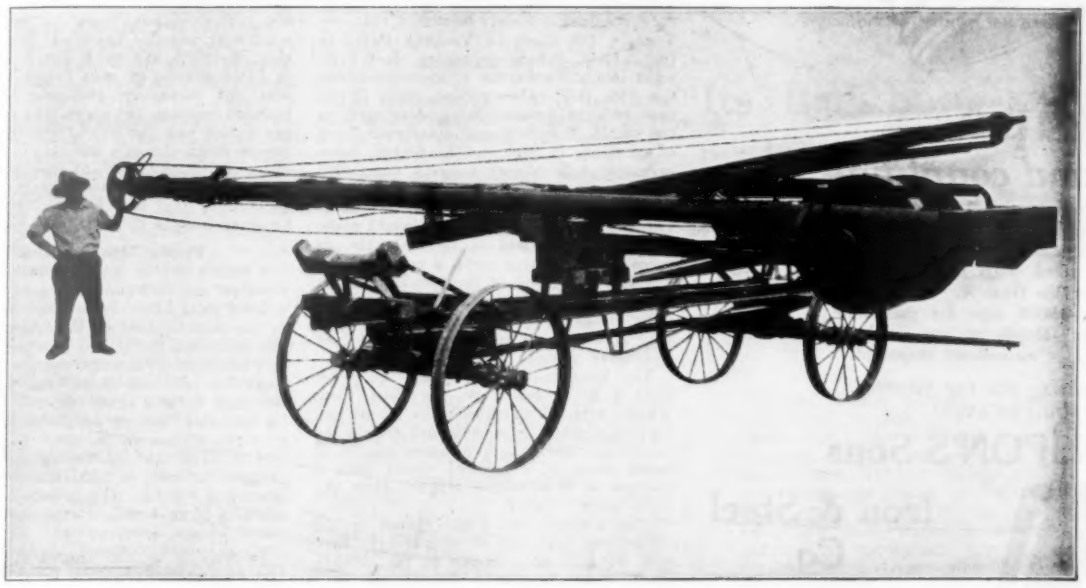
Ever notice some of the so-called pulling machines tremble and shiver, bend in the middle and kick out at the joints for all the world as if they were doing the Shimmy or dancing the Charleston? Every wiggle, every shake and every bend seems to be telling you that you are taking a chance. Why risk ruining a good well by trusting to luck that nothing "busts?"



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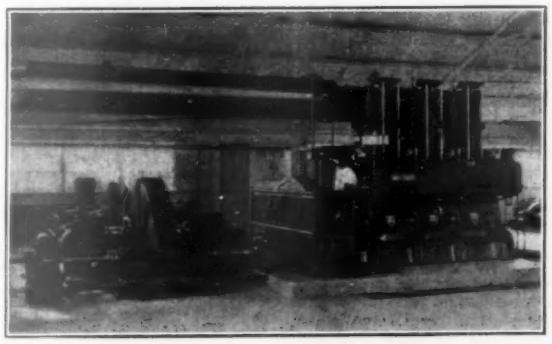
De La Vergne



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Back of this new product stands our century-old reputation, as well as 65 years' experience in paint manufacturing.

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Additional information and prices will be sent upon request.

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Dixon's Red Lead - Graphite primer has the good qualities of red lead together with the well-known water-repellent advantages of a silica-graphite paint.

It fully meets the needs of those who require a red lead paint for priming coats.

DIXON'S Silica-Graphite PAINT

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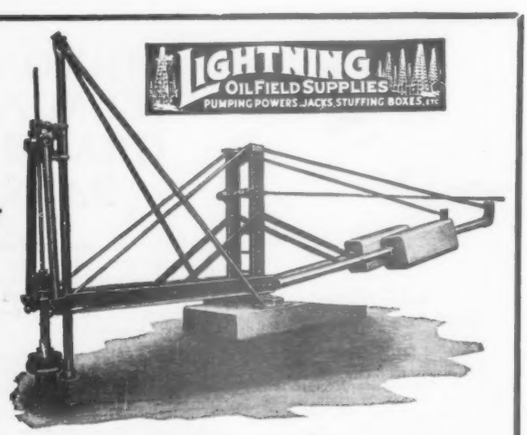

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For deeper pumping. Where, of necessity, light load on pull rods is needed. Long stroke. Polish rod moves in perfectly straight up and down movement. Fulcrum point not over 12 in. above floor—will not get out of line like those highly elevated. Only light concrete foundation required—lowest cost to install. Weight 1250 lbs.

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total production to the present considerably exceeds this figure.

Concluding Statements

Some wildcatting is being done in Ventura Basin at this time, and it is not improbable that new productive areas will eventually be found. The Standard Oil Co. of California is conducting particularly interesting and thorough tests in the alluvium covered area near Montalvo, this being south of the Ventura anticline and just north of the Santa Clara River fault.

In conclusion it may be stated that the Ventura Oil Field in Ventura Basin is the largest future producing factor in sight in California. In ultimate possibilities this field takes second place to no new area at present being developed in the world. A sudden and disastrous flood of oil from it need not be feared, however, as it is almost entirely controlled by three large and capable companies. Should the occasion—a national shortage—demand, the production could probably soon be raised to 200,000 bbls. or more daily. As this need is not in sight, and the properties of the two largest operators will soon be largely protected from competitive drainage, daily production is not expected to reach a half of the figure quoted.

The Ventura Oil Field may be considered a great reservoir, the flow from which, after a short adjustment period, may be accelerated or retarded should the conditions warrant. It has possibilities of being more of a balance wheel than a menace to a stabilized market after the early part of 1927.

The Ventura Oil Field shares in the California heritage of exceedingly long life. It will be a factor in the world's production when many other great fields of the moment are but a memory.

NO GENERAL METHOD FOR TREATING OILS

(Continued from Page 80)

of calcium hydrogen chloride. This method was originally used in Persia and was brought into the United States by the Anglo-Persian company. It has proved very successful in certain instances, but in certain others not so successful. You get very fine stability in some instances and in others, no stability whatever.

We may sometimes treat with alkali. Hydrogen sulphide is the simpler treatment. Caustic soda will render the oil sweet and clean and is the alkali used in various concentrations. In talking with a man from the Anglo-Persian company the other day, he said they use 2 to 5 per cent of caustic soda. It is usually used for the neutralization of sulphuric acid, although very often it is desirable to use a solution of lead oxide. The doctor solution removes and converts certain sulphuric acids. However, there is a class of compounds which exist in certain distillates which it does not remove—acid sulphides.

This method of treating is very often used to effect the neutralization of acid and also rendering the distillate sweet to doctor test.

The liquid sulphuric dioxide is not used very generally in the United States, although it is used in some California crudes. It was originated in Germany for the particular purpose of treating Galician crudes and was found very useful. The treatment is made under somewhat reduced temperature and slight pressure. The pressures do not need to be particularly high; 93 degrees Fahrenheit will never be excessively high.

Use of Distillation

We also use distillation as the method of treating. Distillation of this character, however, is usually so-called steam distillation. Formerly, steam only was used. They do this to some extent even yet where it is desirable to keep the temperature of the distillate as low as possible, due to certain compounds that may break up and give other undesirable compounds.

There are certain absorption materials which may be used, such as fullers earth, bone black, bauxite, etc. I believe bauxite is not used very extensively in this country, although the Anglo-Persian has used it extensively.

Fullers earth is quite well known. The treatment may be made by contact when the very fine clay is intermingled with the distillate, and mixed by either mechanical agitation or blast. The mechanical agitation may be in coils by circulation or some kind of mixer, or better arrangement. It may be treated by percolation. The receptacle is filled with the clay and distillate filtered through. Then there is the vapor phase. I assume you are somewhat familiar with it. The earth is packed into towers. The earlier form of tower was built with angular space surrounding the clay, keeping the clay hot. However, in later towers, it was found that this was not necessary and they are now building towers in which the vaporous gas comes into the top of the tower and passes down through the clay and away, space being provided at the bottom of the tower to take care of unsaturates and palladiums that may be left. There may be some use for this—I do not know.

Public Misconception

I might say in regard to treating of gasoline distillate and kerosene there is a good deal of misconception in regard to the requirement of this class of oils. We find that the public has been taught and educated to demand certain tests, as corrosion test and doctor test and color test and various other things. There is no question but what these tests are all right within limits, but it is undoubtedly a fact that an undue pressure is brought to bear on the refiner which is costing the public money every day. In addition to that, it is costing considerable losses in the refinery.

In regard to the gum test, I might give an instance from the East. The new gum test with the steam oven is considerably different from the old copper dish test. We were running some gum tests when the sun was shining on our copper dish. The next day we took the test when the sun was in the opposite direction. In one case we had 85 milligrams of gum, in the other 135. So you can see the effect of sunlight on the copper dish had a marked effect.

The consuming public demands water white gasoline. They do not demand the doctor test so much, although there is a difference of opinion by the different State Legislatures whether to demand corrosion test, doctor test or both.

REVENUE DEPARTMENT RULING ON DEPLETION

The Internal Revenue Department has issued Regulation 69 relating to the Revenue Act of 1926. Article 1602 relates to depletion. That part relating to oil and gas wells reads as follows:

"Article 1602. Basis for allowance of depletion and depreciation. The basis upon which depletion, exhaustion, wear and tear and obsolescence will be allowed in respect to any property in the same as is provided in Section 204 (a) and (b) for the purpose of determining the gain or loss from the sale or other disposition of such property, except that:

"(2) With respect to oil and gas wells, the allowance for depletion shall be 27½ per cent of the gross income from the recovery during the taxable year, but such allowance shall not exceed 50 per cent of the net income of the taxpayer (computed without allowance for depletion) from the property. In no case shall the deduction for depletion with respect to oil and gas wells be less than it would be if computed without reference to Section 204 (c) (2) and this paragraph."

OIL IN MARTINIQUE

Following the reported discovery of oil on a farm near Vauclin, Martinique, investigations and tests have been made resulting in the decision that oil exists but that the quality and quantity are not determinable at present. The geologist making the investigations expresses the opinion there are two deposits of oil in Martinique instead of one, as supposed following the investigations of two years ago.

REFINERIES MAY UTILIZE WASTE HEAT FOR NUMEROUS DIFFERENT PURPOSES

By Dale S. Miles*
The Empire Refineries, Inc.

Waste heat is commonly understood to mean heat that is serving no useful purpose. It is this and more. Such leaks are usually too plain to be overlooked. They are commonly expressed as hot flue gases, exhaust steam, uninsulated pipes and the like. A more obscure waste is heat that is doing useful work needlessly. Examples of this kind are found in rerunning, pumping enormous quantities of cooling water and in simple reciprocating steam pumps.

The primary source of heat may be taken as fuel in one form or another. Burned under the average plant boiler about 50 or 60 per cent of the available heat is utilized in converting water into steam. In fact, an investigation of a score of eastern plants showed an average boiler efficiency of 44 per cent for the group with 35 per cent the minimum and 62 per cent the maximum. By doing no more than inaugurating proper firing methods it was found possible to raise the average to over 58 per cent, with the minimum 46 per cent and the maximum 71 per cent. The maximum saving of boiler fuel for one plant was 48 per cent, the minimum saving for one plant was 10 per cent.

This improvement is capable of betterment. The addition of economizers, recuperators and similar devices can raise this percentage very appreciably. To see the present possible goal, consider the recently reported tests of the Hell Gate Station boilers where the efficiency was over 90 per cent, the flue gas temperature only 186 degrees at 153 per cent rating.

In Case of Stills

In case of stills the circumstances are different. Boilers are now built to be crowded to the utmost, to be operated at the highest furnace temperatures refractories will stand but stills must not have such fire box temperatures so over ventilation is the common resort for lowering the gas temperature. Added to this the short gas travel and high average temperature of exit gases all result in very low efficiencies, 25 to 20 per cent or even 15 per cent not uncommon for batch stills. Continuous stills are more general and their efficiencies are higher.

Further losses around the crude battery are due to improperly insulated stills, unsuitable vapor towers, uninsulated vapor towers, lack of residuum-crude oil interchangers and the usual water cooled condenser.

In bettering the condition, instead of using possibly several hundred per cent excess air as a diluting medium to reduce excessive temperatures a portion of the flue gas can be recirculated to serve as a diluent. What does escape to the stack can be passed through a recuperator of some type giving up a large amount of its heat to preheating the air necessary to support combustion. Other ways of utilizing this heat in the flue gases are economizers for the boilers, crude preheaters or steam superheaters.

Radiation Inexcusable

Radiation to the atmosphere from a hot surface is an inexcusable waste either in case of uninsulated or improperly insulated shells, vapor lines or towers. The more modern trend in towers provides heavy insulation with control effected by means of cold oil circulated through either way makes use of the heat formerly wasted.

Common practice is to condense the overhead streams in water cooled coils and then in turn cooling the water in cooling towers or spray ponds. The heat abstracted from the vapors is thus radiated to the air and lost. It could be saved, as it is in some few cases, by means of vapor to oil interchangers or condensers. At least the greatest portion could be saved providing suitable equipment could be had.

It is not the purpose of this discussion to deal with corrosion, but the elimination of heat losses through condensers is almost entirely dependent on the development of suitable materials.

A plant is in mind where cast iron condenser coils will last about six years. A highly efficient small multitubular condenser of the oil cooled type will last a little over 30 days before leakage develops sufficient to throw the gasoline stream off color and shut down the battery.

The benefit gained through the use of such a condenser wil not pay for its renewal every month or two but on the other hand there are places where such equipment is serving very satisfactorily and is repaying its cost. This illustration of practical trouble does not need to detract from the general idea of oil cooled condensers as a means of waste eliminnation. In fact many of the modern installations are so taking advantage of heat transfers that very little heat escapes as waste.

This was what was in mind when circulating water was mentioned If a considerable portion of the necessary cooling can be done by incoming oil through proper equipment clearly then it is a waste to transfer the heat to water to be dissipated to the air later.

Superheated Steam

Comparatively few plants using steam in their stills use superheated steam. Eastern practice seems to indicate that superheated steam used in a fairly efficient battery, one having an efficiency of 40 per cent, will cut the fuel consumption by about 10 per cent Incidentally better products will be produced also. Waste heat can be used for superheating the steam.

Further, rather than use live steam, it is better to use exhaust if it would be otherwise wasted. Exhaust steam is practical in stills although not as widely used as it might be. In case the exhaust steam supply is plentiful but of too low pressure, rather than put a burden on the equipment due to an increased back pressure, one of several schemes can be used. One makes use of a percentage of live steam through an ejector like device thereby raising the pressure of the entrained exhaust steam and drying it out as a result of the expansion through the nozzle.

The application of these principles to continuous batteries has resulted in marked savings. For example two plants have been noted recently where from 25 to 30 per cent of the crude, or practically the whole gasoline cut, was removed before the oil ever entered a still shell. What was formerly wasted heat accomplished it.

Rerunning, while necessary to a certain extent, can be done away with in many cases. Formerly, with batch operation even as high as 200 per cent rerun was not considered abnormal for complete plants in some cases.

Now topping plants are in operation that take off everything overhead in one operation finished ready for treating. Slops and pressure benzine are about all this plant ever reruns. Indications are at present that the rerunning of the pressure benzine is unnecessary.

Rerunning

Lub plants cannot get away from some rerunning but these toppers just mentioned indicate the lack of necessity for rerunning in skimming plants. Then if advantage is not taken of this possibility the rerunning represents heat wasted in doing useful work needlessly.

Another of the commonest ways heat is wasted or inefficiently used is through operating steam pumps. The common simple steam pump does not use steam expansively. It takes full line pressure for the full stroke. Fly wheel and compound pumps do better but they do not approach a good steam engine or turbine in the efficient use of heat. A motor pump is or can be quite efficient. The more efficient prime mover using steam expansively can produce electric power to run a

*Before Mid-Continent Section American Society of Mechanical Engineers, Tulsa.

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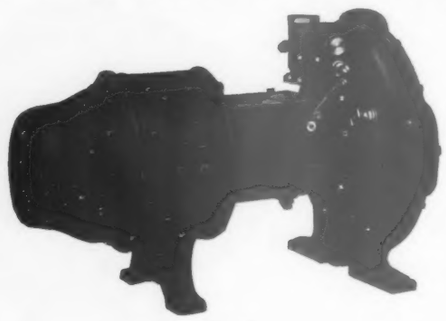

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given capacity of pumps with less waste than will result from the usual "steam hog." Of course large requirements of exhaust steam may alter this in individual cases.

Gas or oil engines may be better than units for generating. Their exhaust is hot and has been successfully used for waste heat boilers.

With the change to electric pumping, as being more efficient in general, a further step in conservation can be made where favorable power rates are procurable. Since the very large central station with its high efficiency can surpass the smaller plant it may be advisable to buy power, having only small waste heat boilers to supply the steam actually needed for process work, heating and fire protection.

On the other hand, the plant may have such a quantity of heat available, a by-product, that waste heat boilers may produce steam so cheaply that the central station cannot compete. Individual studies must determine that.

In any case the plant must be considered as a unit, a suitable heat balance worked out, and an economic study made to determine whether the possible saving will justify the expenditure.

SELECTION OF EQUIPMENT IS NOW SCIENTIFIC WORK

(Continued from Page 80)

dent that we should be able to materially increase our efficiency from better selection of bull ropes when we are able to determine the fabrics used in making of ropes. An illustration of comparative strength tests is presented herewith:

Order of Fiber Strength

(Manila) Philippine Abaca	100 %
Sumatra Abaca	76.8%
Java Sisal	46.3%

Yarn Strength

(Manila) Philippine Abaca	100 %
Sumatra Abaca	83.4%
Java Sisal	64.5%

Rope Strength

(Manila) Philippine Abaca	100 %
Sumatra Abaca	87 %
Java Sisal	74 %

Size of Boilers

The question of boilers is very important. We find that the first error in selecting equipment for boilers is that often too small a boiler is chosen for the work intended. In order to know what size boilers to use it is very important to know how much horsepower we actually need. The horsepower required for drilling with cable tools is generally known, but for the rotary it is not so well known. On a test conducted at Tonkawa two years ago, it was found in using 6-inch rotary drill with fish tail bit, where the drilling was rapid and the pumps were being forced, that the average boiler horsepower during 24 hours was 242. The maximum boiler horsepower was 296. Rock bit drilling required an average of 170. The maximum was 225. It required 275,000 feet of gas per day when we were using the finest gas burner on the market. The gas burner was an automatically regulated burner and the steam curves were very uniform so that we were working the boilers under ideal conditions of firing. If we had been using home made burners and had only the gas pressure that was available, we would not have been able to continue the operation. As a matter of fact, we were conducting this operation on an average of 6-ounce pressure. All of the other wells around were shut down.

Gas Engines

Selections of gas engines should not be made by the bargain counter method. I know of no item of equipment on which there is so little actual field data as on the operating cost, depreciation and other things, on the gas engine. There are so much conflicting and inaccurate data available. The industry should be criticized for its lack of effort to keep records in the field on such items as gas engines, belting, etc.

We find that cast iron sheaves often wear out in five days' time. Many heaps of worn out material of this sort may be seen in every field. Rapid deterioration of one part may cause more rapid deterioration of other equipment.

Softening Water

The question of softening water is really a subject that should be given greater consideration than it has received in the past. Supplying the fields with soft water I am sure would save many a district thousands and thousands of dollars a year. The cost of keeping up engines and boilers due to incrustation from hard water, causing many shut downs, deterioration of lines, etc., is very heavy.

More thought should be given to working out more scientific methods of selecting equipment and the sooner we put the business of producing oil on a more mechanical basis, the more we will be able to show to the world that the oil business is scientifically managed. The business has been very well taken care of from an exploration point of view. Geologists are all given much latitude, but the mechanical engineer is almost forgotten about. He is often engaged to assist some practical man but his efforts are not rewarded to any great extent. He is not given much latitude and consequently much of his work goes into the files and is never read. Mechanizing the industry by proper selection of equipment is perhaps the most needed improvement to be inaugurated.

OIL AND GAS PERMIT RECORD IN SEPTEMBER

The General Land Office of the Department of the Interior has issued a statement reviewing the oil and gas activities in September of the Mineral Division, under the act of 1920. During the month the division received 207 new applications and 3,202 cases for reconsideration.

Permits were granted in 429 cases, an increase over the previous month of 46, and 1,839 applications were finally rejected and closed, an increase of 1,002 over last month, and 71 cases were finally rejected in part; 289 applications were rejected in entirety subject to appeal, and 24 were rejected in part; 277 extensions of time were acted upon and 64 assignments were disposed of; 81 permits were held for cancellation and 143 were canceled; departmental decisions were promulgated in 15 cases, 12 affirming, 1 reversing, and 2 modifying decisions by this office; 497 applications were examined and reports called for from the Geological Survey, and 223 survey reports received; 343 cases are awaiting survey reports and 14 cases awaiting Reclamation Bureau reports, in addition to 352 new applications awaiting reports.

Under the relief sections of the act and other sections providing for the issuance of leases, 1 lease application was forwarded to the Geological Survey for report on the discovery, and 13 leases were transmitted to the secretary for authorization, involving 9 cases, 4 lease applications were rejected subject to appeal, and 1 appeal was suspended for supplemental showing; 1 lease was canceled in part and revocation of the authorization of 2 leases was recommended; 2 amendments of leases were held for rejection subject to appeal.

Six applications for suspension of drilling requirements in lease were disposed of, and 2 drilling contracts were acted upon.

Other actions involved consideration of 2 applications for reduction of royalty, release of surety bonds in 10 cases, and amendment and revision of circular 823.

RUSSIAN OIL FOR TURKEY

The representative of the "Napht Syndicat" has just signed an agreement with the Turkish State Petroleum Monopoly to supply 40,000 tons of petroleum and 6,000 tons of gasoline. Since last spring the Soviet company delivered 11,000 tons of petroleum and 3,000 of gasoline. These quantities represent Turkish consumption for a period of 18 months.

PROGRESS MADE IN ELIMINATION OF WASTE IN OIL EXPLORATION

By John M. Lovejoy*
Vice President, American Petroleum Corp.

Geology is probably the greatest medium for elimination of waste in exploration. From the time of the discovery of the anticlinal theory of accumulation of oil, the more progressive companies have used geology as an aid in their exploration work. The anticlinal theory of accumulation has developed with its ramifications and modifications, but it is definitely and certainly established that oil does accumulate according to this general theory. While the oil geologist can not with any assurance tell you where to find oil, he can tell you with considerable assurance where you will not find it, and thus saves an enormous expenditure for the company. His service then to the industry is twofold; first in his advice against drilling of wells where there is very little possibility of finding oil, and second, in assisting in the search for places where accumulation of oil is possible.

The geologist renders still another service to the industry which is not exactly along the lines of waste, but has a great deal to do with the development of the industry itself. That is in the attractive presentation by geologists of areas to be drilled, in such a way that capital is readily forthcoming for the area to be tested. In other words, the wildcatter uses geology as an excuse to wildcat and he feels perfectly justified in going out miles away from any oil development, if he can be shown that there is a good structure there to be drilled. If it were not for that excuse there would not be very much wildcatting done as it would have to be done absolutely blindly. While structures are often blind, their presence encourages the wildcatter and that is what brings in the oil.

Development of Pools

A great deal has been accomplished by this brand of the industry in the development of pools after they have been discovered. As a pool is being developed it is the custom now for the operators to have resident geologists whose task it is to collect samples of well cuttings and keep their subsurface data up to the minute at all times. This results in the drilling of a minimum number of edge wells and dry holes which are necessary to define a pool. This certainly eliminates a great deal of waste in unnecessary drilling to define the pool. As an example, the Wilcox sand pool developed in 1924 at Key West, south of Stroud, was discovered by a well making approximately 700 or 800 bbls. From a study of the geology of this immediate area it was thought that the pool which this well had opened was on the east side of the well. About 15 or 20 wells were started east of the discovery and not a single well started to the west. All of the wells drilled to the east were completd as producers and there has never, to my knowledge, been a well drilled to the west of the discovery well. Wells drilled to the north and south of the discovery were very light, which showed that the pool would lie to the east. The discovery was actually the west limit of the pool. Without the aid of geology in this instance, the usual development would have followed the discovery well in all directions around it, and much money would have been thrown away in useless drilling. When you think of that, it is a great tribute to geology.

Wildcatting Waste

I would now like to touch on a matter which is not strictly one of waste, but rather of dividing the great expense which necessarily goes hand in hand with wildcatting. There are two methods which can be used in the drilling of wildcat wells. A wildcat block can be secured and drilled "straight up," the cost to the operator being very great. Secondly, the block can be secured and the well started and acreage sold around the well in order to divide the expense. This method has been used by individuals for many years, but has not been a popular procedure by the larger companies, who have usually played their wildcats straight up. This is, in my opinion, a great waste of money and should be, and will be, modified.

The cost of drilling wildcat wells should be divided. During the last three years a few of the major companies have adopted this policy. The Marland company has been the leader in this procedure. They have sold many wildcats in Kansas, Oklahoma and Texas, retaining in all cases enough acreage for themselves so that, if the wildcat should happen to be successful, they would benefit handsomely by its success. This company does the necessary geological work and leasing and rounding out of the block, ready for the drill. It either then drills the block itself, selling spreads around the well, or turns it to an individual operator who will do the same thing.

Many companies are now willing to sell acreage around wildcat wells that would not have considgred it before. This a development of the past year or two. It is after all, the only logical way to wildcat. I do not hesitate to predict that in three or four years from now, there will be very few wildcats not financed in that way. This is not particularly on the subject of waste but is very closely associated with it.

Scouting Methods

To get back to waste in exploration: I think some progress has been made in scout information and maps. There is still room for great improvement along these lines. The mapping service rendered now in Oklahoma has eliminated a very large amount of waste. I refer to the maps provided by the Mid-Continent Mapping Co., which show up-to-date land ownership. This system, as you know, is handled by the payment of an initial fee to the service. The Number One map that you receive on any acreage costs a certain sum. This map can be replaced and brought up-to-date at any time by turning it in to the company and receiving a new one for some nominal charge. It is quite obvious that this system saves the companies a very large amount of work, as heretofore it was necessary when they wanted correct up-to-date ownerships in a certain area to send a man to the county seat and get a takeoff from the records.

I think there has been a great deal of waste in the use of the scout. This is still going on but some progress has been made in the work. I think the routine work of the scout is rather wasteful and useless. If a scout simply fills out his location and completion slips and sends them into the office and considers his work done, you are not getting any service out of him except routine—machine like service. I think scouts should use their intelligence. He should be allowed to do some land work from time to time, in order to increase his interest in his work. He is virtually the assistant to the local land man who, after all, is the agent and representative of the company in that area. The pipeline companies and larger companies have to maintain a complete scouting service of their own, but I am sure the smaller companies at least do not need such service. Much of this waste could be eliminated. Immediately a man is given a position as scout with a company, opportunity is knocking at his door constantly. I know of no other work that offers such opportunities, and he must not allow himself to be submerged by the routine work he must necessarily do.

Pooling Interests

Another matter is that of pooling interests. About three months ago an informal meeting was called of the executives of probably 30 companies, to discuss the possibility of doing some work

(Continued on Page 168)

*Before Mid-Continent Section, American Society of Mechanical Engineers.

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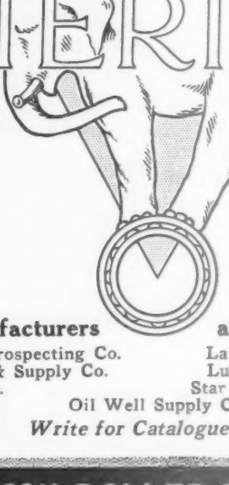

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PROBLEMS IN FLOWING WELLS BY NATURAL OR ARTIFICIAL MEANS

By Hollis P. Porter*
Gypsy Oil Co.

Flowing wells by either natural or artificial means furnish some of the many problems for consideration, and the elimination of waste can better be accomplished by first considering how best to prepare the well, and to have at hand at first a general understanding of what takes place when the well flows by natural means and later an understanding of how to flow it with artificial means.

The majority of oil wells when first drilled flow due to gas pressure, and quite a number flow due to hydrostatic pressure, but there are a great many which do not flow. When a well stands nearly full of oil, but will not flow of its own accord, it is often found profitable to install a compressor station and to flow it with air or gas from such a station. In case high pressure gas in sufficient quantity is available this may be used.

Whenever gas is used to flow a well, a gas trap which will separate the oil and gas should be used. This applies in any case regardless of the use which is made of the gas. Sometimes a gas tight flow tank is used as a trap.

A gas trap helps to strip the gas of the light fractions of oil and the result is a higher gravity oil produced. Meters should always be set to measure both gas produced and gas or air compressed. A recording pressure gauge may be used also to an advantage in determining the action of the well.

Preparations Needed

Preparation should be made to flow new wells by artificial means while they are still flush. It is much better to flow a well than to swab it. Swabbing is not only expensive but it damages the casing. Portable or semiportable compressor plants might be used to an advantage in cases where the production falls rapidly. A well built stationary plant should be installed when there is prospect of the well producing over a long period of time. Such a plant can be used to assist the well when flowing natural, and then to continue to flow it artificially during the period of time that would ordinarily be the swabbing period, and finally a pressure drive should be initiated to accelerate the production of oil by driving it into the well in the same manner as existed while there was a supply of natural gas pressure.

The period of pressure drive is better begun immediately when the well is started to pump. It can be employed profitably for many years as has been demonstrated in the old fields of Ohio and also, more recently in parts of Oklahoma.

The flowing well should be kept under constant control from the very beginning. The pressure should be held back in case there is an excess of gas. The use of special connection and the employment of a "bean" or choker for control of pressure is important in many new wells. By means of these devices the well can be made to flow during a much longer period of time and a greater ultimate amount of oil can be produced from the sand than can be produced where proper pressure control does not exist.

Proper designs of flow columns and sizes of chokers all depend upon the physical characteristics of the individual well, and they should be figured out accordingly. No cut and dried rules can be followed.

In general as the volume of gas and oil being produced from a well declines, the size of the flow column should be changed in order to keep the well flowing with the smallest gas to oil ratio that can be obtained.

Proper Use of Gas

We all realize that we are passing up opportunities daily to utilize the natural energy stored up in the form of gas with the oil, which energy should be applied to flowing wells intelligently and maintaining a natural flow over a much longer period of time than has been accomplished in most cases according to our past experience. This statement does not assume that we have not learned something about flowing wells in the past but we might apply in a more scientific manner the fundamental principles which underlie such mechanical operations.

Each well has its own characteristics and the proper control of pressure for flowing it depends upon a great many variable factors. The slightest change in the diameter or the length of the tubing may result in surprising changes in the quantity of fluid and the oil gas ratio which a well is producing. Changes of less than one-fourth inch in diameter and 25 to 50 feet in length will some time make a marked change in the capacity and efficiency.

In practical tests it has often been demonstrated by engineers that a well will flow more efficiently when the annular space or the cross sectional area is gradually increased, beginning at the bottom of the well and extending toward the surface of the ground. The annular space would apply, of course, to a case where the well is flowed through the casing around the outside of the tubing, and the cross sectional area would apply to a case where the well is flowed through tubing. When the well is flowed through the casing, and supplied with gas or air pressure through the tubing, the tubing should occupy more space as it reaches the bottom and thereby reduces the annular space in the casing. For example, one might reduce the tubing, running 3-inch tubing for one third of the way then reduce to 2½-inch tubing for the next third and finally use 2-inch tubing near the surface of the ground. This would give an increasing annular space inside the casing, outside of the tubing.

On the other hand, if one is flowing the well through the tubing, the tubing should be run in reverse condition so that the small size is at the bottom of the well and the larger size near the surface of the ground. Each change from one size of tubing to another should be made by a long cone taper swage which has no abrupt changes in its diameter. The efficiency of flowing a well when employing this principle is greatly increased because of the expanding air or gas which increases its volume very greatly as it nears the surface of the ground.

Information Necessary

In order to design equipment for flowing a well or for controlling the pressure of a flowing well, certain things must be known about the condition of the well. There should be as much of the following information gathered as possible:

1. Rock pressure.
2. Depth of well.
3. Size of casing.
4. Diameter of casing.
5. Elevation at which casing is set.
6. Gravity of oil.
7. Percentage of water.
8. Elevation at which fluid stands when well is not being pumped or is not flowing.
9. The elevation at which the fluid can be expected to stand when the well is producing its normal production. This can be ascertained in some cases while a well is being swabbed, noting where the swab strikes the fluid after the well has been swabbed down.
10. The quantity in barrels of fluid, including both water and oil which the well can be expected to produce continuously.
11. The volume of gas which the well produces.

From the above data it will then be possible to design:

1. The length of the tubing.
2. The size of the tubing.
3. The submergence before well begins to flow.
4. The submergence while flowing.

*Before Mid-Continent Section, American Society of Mechanical Engineers.

5. The pressure required to make well flow.
6. The number of feet of gas or air required to make well flow.

There are a great many essential things to consider in flowing a well properly, some of these follow:

1. Foot piece may be employed at the bottom of the tubing when flowed through tubing.
2. Each well must be studied to see what type of foot piece is essential. It may be unnecessary to have a foot piece. An example may be cited, however, where it would be to a great advantage to have what might be called a jet piece which will admit a small amount of air or gas through the flow line or tubing at an elevation which would be above the lowest elevation at which the fluid stands when flowing.

Starting and Flowing Pressures

The level of the fluid in a well before starting to flow with artificial pressure is higher than it is while flowing. In order to maintain a sufficient submergence while flowing, it is necessary to extend the tubing down into the fluid as deep as possible, and at the same time to be sure that it is not so deep that the pressure will not start the well flowing. In many wells where the fluid stands high, this condition has prevented the extending of the tubing to a sufficiently low elevation for the best results, because the pressure to start the well would be too great.

In order to overcome this objectionable condition, the writer designed a three stage lift, which has proved to be of great value when flowing wells with artificial pressure.

Waste which is to be eliminated by the mechanical engineer in flowing wells consists of:

(1) The energy allowed to escape with flush production, when a new well is drilled in and not controlled.

(2) Gas and gasoline coming from new wells in volume too great to be utilized properly.

(3) Loss of recoverable oil when gas is released too rapidly.

(4) Loss due to early investment in pumping equipment. Present signs indicate progress to eliminate these wastes.

Geologists Applying Science to Modern Industrial Needs

By Charles E. Kern

Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Nov. 6.—The teaching of geology as a cultural study with reference to the growth of that science in respect to mining of the metals and petroleum was the subject of an interesting address by Dr. George Otis Smith director of the U. S. Geological Survey at Johns Hopkins University, Baltimore, Md.

Both mining geology and petroleum geology, said Doctor Smith, have won one recognition in the business work of today.

"Within a decade or so," said Doctor Smith, "the science of oil geology has been evolved through the collection of facts and the deduction of principles. Though this branch of applied science has perhaps attained only the stature of youth, it has been forced by circumstances to take up the man-sized task of finding oil. Doubtless it might be better if oil geology were given sufficient time to reach full maturity but the fortunate outcome of this precocious growth is that the oil companies today find ready for their aid an agency that was not available only a few years ago.

"As we look back to these recent beginnings of the application of geology to the discovery of oil, we realize that the anticlinal hypothesis brought in the new day. Many have contributed to the development of this fundamental theory, but I. C. White must be credited with giving the new idea a standing with the practical men who test out scientific prophecy with the drill. And Doctor White may also be regarded as the pioneer among consulting petroleum geologists, at present by far the largest group.

Judgments Promptly Tested.

"In my opinion the element that has stimulated the growth of applied geology and strengthened it at every stage in that growth is the promptness with which the judgments of the geologist are put to the test. Not only does geology at work use the facts gained from field observation but its engineering accuracy is always subjected to an immediate proof on the ground. The true worth of the petroleum geologist's science is shown up by the drill before there is any opportunity to forget what was predicted or who predicted it. Direct responsibility of this kind has a tendency to hasten the evolution of a very practical science. So these recent years have witnessed the development of specialized geology—highly scientific at heart but truly utilitarian in application.

"Recognition of geology as practical, as an art as well as a science, has been the crowning event in its history during these 50 years. Industry now demands geologists to apply the science to meet industrial needs. In the last decade alone the annual consumption of mineral raw materials has doubled, additional reserves are demanded, and it is the geologist who must direct the search for new supplies. There has been similar expansion in the construction of skyscraping buildings, mountain piercing tunnels, and lake-creating dams and fortunately the constructing engineer has at last begun to consult the geologist as a promising source of the needed aid, by reason of his special knowledge of the third dimension of the earth's crust. So it happens that today we find geology and geologists mentioned on the front page of the daily newspaper, and in bankers' descriptions of bond issues, as well as in the columns of the technical journals.

Applied Geology.

"This gratifying expansion of the field of applied geology has been followed by the expansion of the profession. When some of us left the Johns Hopkins Laboratories only three avenues were open to us for employment—the federal and state surveys and the college faculties; and then the membership roll of the Geological Society of America, numbering a little over 200 names, was a nearly complete directory of American geologists. Now, 30 years later, the profession of geologists presents many openings, some of them more attractive than anything that was in sight in our day; and not only has the Geological Survey of America more than doubled its membership, but there is a strong professional society limited to the recognized workers in a single field of geology—the American Association of Petroleum Geologists, whose membership numbers over 1,500, three times that of the older society. Nor is this the only expansion, for another younger organization, the Society of Economic Geologists, with as many members as the Geological Society of America had 30 years ago, represents a different phase of professional geology. Naturally, there is considerable duplication in the rosters, but the existence of these younger and intensely active societies is proof of the growth of the profession and furnishes a fair measure of that growth.

"No review of these 50 years of progress would be complete without a glance at the present status of geology as a science. We may well ask ourselves what is the effect of this active demand for practical geologists upon the science itself. The geologist at work knows from practical experiences that each new application of his science to the requirements of the engineer calls for a corresponding reinforcement by scientific truth. It is this opening up of new vistas that has led the petroleum geologists, for instance, to be so outspoken in their recognition of scientific research as absolutely essential, and because of this larger vision, the oil industry has rallied to the support of research making possible a program far more inclusive than was ever thought of a few years ago. Geology at work is backing up scientific research."

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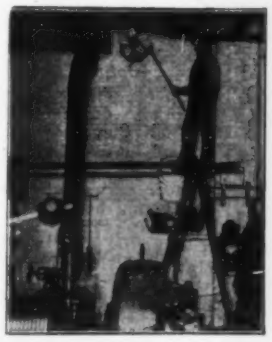

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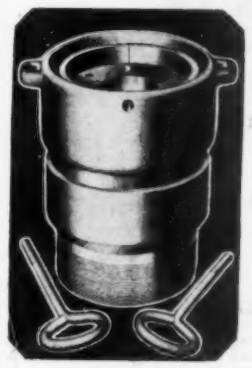

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PITTSBURG, KANSAS

SEPTEMBER PRODUCTION BY POOL IN FIVE MID-CONTINENT STATES

The Mid-Continent fields in September produced an average of 1,171,102 bbls. a day as against 1,153,559 bbls. a day in August, showing an increase in September averaging 17,543 bbls. a day. In the Gulf Coast and southwest Texas fields, which are outside what is known as the Mid-Continent Field, there was a gain of 17,707 bbls. a day. In the five states, Kansas, Oklahoma, Texas, Arkansas and Louisiana, the combined average daily production in September was 1,405,348 bbls. as against 1,370,098 bbls. in August, an increase in September of 35,250 bbls. a day.

Following are the figures:

MID-CONTINENT FIELDS

	Daily Av. Bbls.	Month Bbls.
Kansas	116,002	3,480,060
Oklahoma	481,217	14,436,510
North Texas	94,443	2,833,290
Central Texas	50,721	1,521,630
West Texas	42,893	1,286,790
Panhandle Texas	114,063	3,421,890
East Central Texas	61,549	1,846,470
Arkansas	153,441	4,603,230
North Louisiana	56,773	1,703,190
Total September	1,171,102	35,133,006
Total August	1,153,559	35,760,329
Difference	17,543	667,049

Gulf Coast and Southwest Texas

Gulf Coast (Tex.-La.)	188,532	5,655,960
Southwest Texas	45,714	1,371,420
Total Sept.	234,246	7,027,380
Total August	216,539	6,712,709
Difference	17,707	314,671

Production by States.

	Daily Av. Bbls.	Month Bbls.
Kansas	116,002	3,480,060
Oklahoma	481,217	14,436,510
Texas	585,360	17,560,800
Arkansas	153,441	4,603,230
Louisiana	69,328	2,079,840
Total September	1,405,348	42,160,440
Total August	1,370,098	42,473,038
Difference	35,250	312,598

KANSAS

Daily Average and Total Monthly Production in September.

Marion County:	Daily Av.	Month
Florence	1,270	38,100
Peabody	1,787	53,610
Covert-Sellers	735	22,050
Total	3,792	113,760
Butler County:		
Elbing	2,764	82,920
Potwin	478	14,340
Cameron-Robinson	767	22,710
Wilson-Dunkle	1,565	46,950
Towanda	2,784	83,520
Fox Bush	1,575	47,250
Nuttle-Koogler	2,211	66,330
Eldorado	6,338	190,140
Smock	290	8,700
Leon-Weaver	1,947	58,410
North Augusta	1,573	47,190
South Augusta	1,839	55,170
Sluss	371	11,130
Douglass	133	3,990
Keighly	3,186	95,580
Eastern Butler	1,294	38,820
Total	29,105	873,150
Greenwood-Woodson Counties:		
Sallyards	1,558	46,740
Teeter-Fixley-Scott	17,947	538,410
Virgil	4,519	135,570
Thrall-Burkett	3,546	106,380
Seely	15,481	462,930
Polhamus	1,858	55,740
Wiggins	3,420	102,600
Miscellaneous	604	18,120
Total	48,883	1,466,490
Cowley County:		
Rainbow Bend	2,670	80,100
Slick	1,495	44,850
Graham	1,127	33,810
Rock (Twp. 30-4)	324	9,720
Clark (Twp. 31-5)	283	8,490
Eastman (Twps. 30-6 and 31-6)	856	25,680
Windfield-New Salem (Twps. 32-4 and 32-5)	2,054	61,620
Miscellaneous	499	14,970
Total	9,308	279,240
Other Counties:		
Sumner	3,470	104,100
Rice	954	28,620
Russell	4,624	138,720
Harvey	32	960
Chautauqua	2,463	73,890
Elk	2,063	61,890
Wilson	254	7,620
Montgomery	1,873	56,190
Allen	1,911	57,330
Neosho	804	24,120
Lyon	2,130	63,900
Miami	455	13,650
Franklin	530	15,900
Douglass	44	1,320
Bourbon	19	570
Linn	240	7,200
Anderson	3,011	90,333
Labette	37	1,110
Total	24,914	747,420
Total September	116,002	3,480,060
Total August	119,756	3,712,436
Difference	3,754	232,376

OKLAHOMA

Daily Average and Total Monthly Production in September

	Daily Av.	Monthly Av.
Washington County	6,146	184,380
Nowata County	*4,310	129,300
Rogers	1,574	47,220
Osage and Eastern Kay Counties:		
Burbank	47,273	1,418,190
Osage, outside Burbank	33,869	1,016,070
Total	81,142	2,434,260
Tulsa County:		
Bird Creek, Owasso, etc.	3,851	115,530
Red Fork, Sand Springs, Bruner, Turkey Mountain and Fisher	3,114	93,420
Sixby, Leonard and Jenks	2,904	87,120
Broken Arrow and Coweta	1,135	34,050
Total	11,004	330,120
Okmulgee, Muskogee and McIntosh Counties:		
Mounds, Beggs, Hamilton Switch, Youngstown	10,463	313,890
Bald Hill and Haskell	5,380	161,400
Morris, Boynton and Cole	3,506	105,180
Okmulgee	2,649	79,470
Tiger Flats, Henryetta, Schulter and Bartlett	3,812	114,360
Total	25,810	774,300
Okfuskee, Seminole and Hughes Counties:		
Seminole	20,815	624,450
Deaner-Lyons	3,994	119,820
Wewoka	30,380	911,400
Cromwell	15,790	473,700
Papoose-Gilcrease	10,231	306,930
Okemah	115	3,450
Weleetka	1,070	32,100
Wetumka	35	1,050
Yeager	597	17,910
Miscellaneous	645	19,350
Total	83,672	2,510,160
Creek County:		
Cushing-Shamrock	20,581	617,430
Mannford-Olive	666	19,980
Glenn Pool, Sapulpa and Kiefer	8,626	258,780
Bristow, Kellyville and Depew	25,818	774,540
North Bristow (Twp. 17-8)	2,514	75,420
E. Bristow or Slick	5,637	169,110
Total	63,842	1,915,260
Pawnee County:		
Cleveland	4,882	146,460
Keystone	2,600	78,000
Jennings	4,651	139,530
Otoe or Watchorn	2,857	85,710
Masham	60	1,800
Ralston	204	6,120
Total	15,254	457,620
Yale, Quay and Ingalls	6,618	198,540
North Cushing or March Pool	2,490	74,700
Deep Rock (23-18-3)	2,802	84,060
Total	11,910	357,300
Lincoln County:		
Stroud	2,019	60,570
Davenport	6,973	179,190
Kendrick	1,537	46,110
Total	9,529	285,870
Kay, Grant and Noble Counties:		
Blackwell	1,674	50,220
Otstot	2,447	73,410
Deer Creek	67	2,010
Ponca City	781	23,430
Mervine	599	17,970
No. Braman	7,760	232,800
So. Braman	8,220	246,600
Hubbard	2,255	67,650
Thomas	2,323	69,690
Tonkawa	40,173	1,205,190
Billings	314	9,420
Miscellaneous	416	12,480
Total	67,029	2,010,870
Garfield County:		
Garber	33,469	1,004,070
Carter County:		
Healdton	15,233	456,990
Hewitt	11,179	335,370
Graham	7,372	221,160
Fox	3,729	111,870
Brock	1,449	43,470
Tussy or Scholem Alechem	7,983	239,490
Total	46,945	1,408,350
Stephens-Cotton Counties:		
Loco-Milroy	2,199	65,970
Comanche	660	19,800
Duncan	5,678	170,340
Walters	905	27,150
Kilgore	159	4,770
Knox (2-2n-5w)	1,352	40,560
Total	10,953	328,590
Jefferson County:		
Lloyd	75	2,250
Hambro	3,001	90,030
Frances	155	4,650
Total	3,231	96,930
Caddo County:		
Cement	1,874	56,220
Garvin County:		
Robberson	3,056	91,680
Beckham County:		
Sayre	62	1,860
Pontotoc County:		
Allen	268	8,040
Pottawatomie County:		
Maud	27	810
Marshall County:		
Madill	110	3,300
Total September	481,217	14,436,510
Total August	471,459	14,615,236
Difference	9,758	178,726

NORTH AND CENTRAL TEXAS

Daily Average and Total Monthly Production in September

	Daily Av.	Monthly Av.
North Central Texas:		
Burburnett	11,614	348,420
Electra	17,017	510,510
Iowa Park K. M. A.	4,193	125,790
Archer County	30,625	918,750
Clay County	611	18,330

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The Oil and Gas Journal

Tulsa, Okla.

"America's Greatest Petroleum Publication"

Wilbarger County	14,210	426,300
Montague County	7,397	221,910
Young County	8,309	249,270
Cook County	327	9,810
Baylor County	140	4,200
Total	94,443	2,833,290
Central Texas:		
Clear Fork	5,070	152,100
Breckenridge	5,327	159,810
Caddo	3,371	101,130
Ranger-Eastland	4,861	145,830
Rising Star	72	2,160
Sipe Springs	116	3,480
Desdemona	1,710	51,300
Pioneer	540	16,200
Brown County	12,956	388,680
Calahan County	4,174	125,220
Coleman County	1,578	47,340
Throckmorton County	1,434	43,020
Jack County	165	4,950
Palo Pinto County	597	17,910
Shackelford	8,750	262,500
Total	50,721	1,521,630
West Texas:		
Crane County	1,444	43,320
Reagan County (Big Lake)	29,142	874,260
Mitchell County	3,425	102,750
Howard County	339	10,170
Scurry County	48	1,440
Loving County	4	120
Upton County	7,483	224,490
Crockett County	1,008	30,240
Total	42,893	1,286,790
Panhandle:		
Carson County	4,019	120,570
Hutchinson County	106,108	3,183,240
Wheeler	264	7,920
Gray	3,672	110,160
Total	114,063	3,421,890
East Central Texas:		
Powell	26,879	806,370
Mexia	12,811	384,330
Currie	905	27,150
Richland	1,490	44,700
Wortham	5,738	172,140
Nigger Creek	13,726	411,780
Total	61,549	1,846,470
Total September	363,669	10,910,070
Total August	348,063	10,789,953
Difference	15,606	120,117

NORTH LOUISIANA

Daily Average and Monthly Production in September

Field	Daily Av.	Monthly Pro.
Bellevue	2,070	62,100
Caddo light	10,125	303,750
Caddo heavy	2,863	85,890
Cotton Valley	7,310	219,300
De Soto and Red River	4,111	123,330
Elm Grove	535	16,050
Haynesville	9,372	281,160
Homer	5,471	164,130
Urania	14,916	447,480
Total September	56,773	1,703,190
Total August	56,823	1,761,523
Difference	50	58,323

ARKANSAS

Daily Average and Monthly Production in September

	Daily Av.	Monthly Prod
Smackover heavy	120,067	3,602,010
Smackover light	14,608	438,240
El Dorado	6,884	206,520
Lisbon	8,180	245,400
Nevada	1,964	58,920
Stephens	1,738	52,140
Total September	153,441	4,603,230
Total August	157,361	4,878,164
Difference	3,920	274,934

GULF COAST

Daily Average and Monthly Production in September

District:	Daily Av.	Monthly Av.
Boling	2,311	39,330
Batson	1,614	48,420
Blue Ridge	1,480	44,400
Barber Hill	1,104	33,120
Big Creek	1,814	54,420
Damon Mound	787	23,610
Dayton	177	5,310
Edgerly (La.)	767	23,010
Goose Creek	10,145	304,350
Humble	4,520	135,600
Hull	22,100	663,000
High Island	120	3,900
Jennings (La.)	1,180	35,400
Lockport (La.)	5,500	165,000
Markham	125	3,750
Nash	956	28,680
Orange	7,841	235,230
Orchard	122	3,660
Pierce Junction	3,241	97,230
Piedras Pintas	133	3,990
Spindletop	93,217	2,796,510
Saratoga	1,424	42,720
Sour Lake	10,100	303,000
South Liberty	4,080	122,400
Vinton (La.)	5,028	150,840
West Columbia	8,445	253,350
Welsh-Anse La Bute (La.)	80	2,400
*Miscellaneous	111	3,300
Total September	188,532	5,655,960
Total August	170,549	5,287,019
Difference	17,983	368,941

*Includes Nacogdoches, Washington County, Kleberg County and scattered.

SOUTHWEST TEXAS

Daily Average and Monthly Production in September

Field:	Daily Av.	Monthly Av.
Luling	22,587	677,610
Mirando*	16,422	492,660
Somerset	2,025	60,750
Calliham	84	2,520
Rockdale-Minerva	930	27,900
Lockhart	3,666	109,980
Total September	45,714	1,371,420
Total August	45,990	1,425,690
Difference	276	54,270

*Includes Webb, Jim Hogg and Zapata Counties.

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A type for every size and purpose. No. 1—cuts ⅛ to 1"; No. 5 cuts ½ to 2". No. 10 is a ratchet cutter—2½ to 4-inch. Nos. 106, 108 and 112 are geared, pinion driven cutters for hand use or with power. 106 cuts 2½ to 6"; 108 cuts 4½ to 8"; 112 cuts 9 to 12".

The story of these cutters is interestingly told in a special folder—as well as in the Beaver catalog. Where shall we send your copy?

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PROGRESS IS MADE IN ELIMINATION OF WASTE

(Continued from Page 163)

along the lines of pooling interests. What prompted this meeting was the question of lease holding in the general south area, near Wewoka and Seminole. Most of the leases down there had been taken about five years ago and were all expired. If you have an 80-acre expiring, you do not have enough acreage to drill and you cannot protect your lease. To renew costs any way from $100 up. If two or three companies, with expiring leases, instead of renewing their leases can go in together and drill a well, either drawing all the acreage into a pool and jointly drilling the well in proportion to the amount of acreage owned, or contributing so-called dry hole money, this would effect a great saving. But instead of $1,000 or $2,000 or $3,000 dry hole money for an offset well, it was the consensus of opinion that the real cost of the well should be covered by dry hole contributions. For instance, a section is owned in quarter interests. One quarter section is expiring and they decide to drill a well. If all of the four owners should pay one-fourth of the cost of the well and perhaps toss a coin to see on whose land the well is to be drilled, it would save all concerned.

There are other ways of pooling interests. We are now considering a pooling proposition. We got together and drew a square, covering most of the structure, then figured the amount of acreage owned by the various companies. We happened to own 11-51. Then another square was drawn outside of the first one. Acreage in that area was given half the consideration as that in the first. I am quite sure that this particular pool play will go over and the well will be drilled, we paying 11-51 of the cost of the well. Probably the company owning the majority interest will drill the well and have the management of the property. That is a great saving and I think this will do much in the elimination of waste in exploration.

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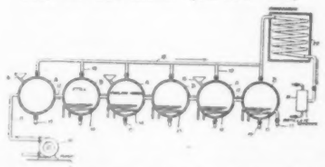
Recent Patents

1,601,406. Hydrogenation and Production of Nonsludging Oils. Herbert Raymond Moody, New York, N. Y. Filed May 28, 1923. Serial No. 642,083. Nine claims. (Cl. 196—43.)

6. A method of treating sludge-forming oil to render sludge-forming constituents thereof non-sludging, which comprises treating the same with aluminum carbide and aluminum chloride at an elevated temperature, substantially as described.

1,601,421. Treating Hydrocarbon Oils. Edson R. Wolcott, Los Angeles, Calif., assignor to The Texas Company, New York, N. Y., a corporation of Texas. Filed October 1, 1924. Serial No. 740,902. One claim. (Cl. 196—54.)



The process of treating hydrocarbon oils that comprises continuously passing the oil through a series of pools, heating and cooling alternate pools, introducing aluminum chlorid material to the cooled pools and removing and condensing vapors generated from the heated pools.

1,601,636. Production of Lower-Boiling Distillates from Higher-Boiling Petroleum Hydrocarbons. Almer McDuffie McAfee, Port Arthur, Tex., assignor to Gulf Refining Co., Pittsburgh, Pa., a corporation of Texas. Filed April 25, 1925. Serial No. 25,926. Six claims. (Cl. 196—54.)

1. In the production of lower boiling oils from higher boiling oils with the aid of aluminum chlorid by distillation of oil

ROSS-MEEHAN FOUNDRIES
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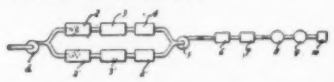
1,601,753. Process of Refining Mineral Oil. Theodor Hellthaler, Granschutz, Germany, assignor to the Firm: Hugo Stinnes Riebeck Montan und Olwerke Akt. Ges., Halle-on-the-Saale, Germany. Filed August 1, 1925, Serial No. 47,609, and in Germany March 21, 1925. Five claims. (Cl. 196—44.)

1. The process of refining mineral oils which consists in treating the oils with anhydrous antimony pentahalids.

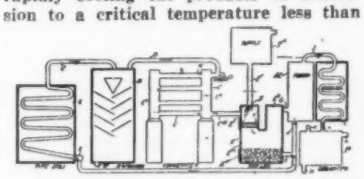
1,602,310. Splitting Up of Tars, Crude Mineral Oils, and the Like. Michael Melamid, Freiburg, Germany. Filed July 5, 1923. Serial No. 649,689, and in Germany April 23, 1923. Nine Claims. (Cl. 196—53.)



7. The process of treating tars, crude mineral oils and similar substances and of preventing the separation of carbon and pitchy matter in the catalytic decomposition thereof, which consists in highly dispersing such material in the presence of hydrogen, and thereby converting said material into a foggy, gas-like condition, and treating the mixture obtained at a high temperature exclusively with a metal catalyzer in a substantially pure, metallic condition and liquefying at the temperature of reaction, and incapable of the formation of carbides.

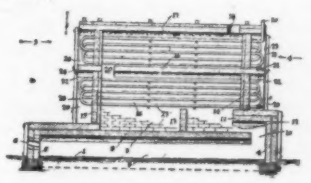
1,601,786. —Process for Treating Hydrocarbon Oils. Joseph B. Weaver, Chicago, Ill., assignor to Oil Products Co., Toledo, Ohio, a corporation of Ohio. Filed June 15, 1925. Serial No. 37,244. Four claims. (Cl. 196—61.)

1. The process of treating hydrocarbon oil which comprises vaporizing the oil, then while the oil is in the vapor phrase converting the oil at a temperature in excess of approximately 1000 degrees Fahrenheit, and immediately upon completing the conversion in the vapor phase rapidly cooling the products of conversion to a critical temperature less than



approximately 600 degrees Fahrenheit, above which critical temperature the cooling will produce a deposit of substantially all the carbon that will be formed in cooling, collecting the carbon so formed in a manner suitable for convenient removal and then continuing the further treatment of the products of conversion at a temperature sufficiently low to produce no further substantial carbon deposit.

1,599,833. Oil-Refining Still. Francis C. Moore and Perry Vandervort, Long Beach, Calif. Filed September 4, 1924. Serial No. 735,774. 2 Claims. (Cl. 196—116.)



1. An oil refining still comprising in combination a furnace having side walls, a fire box formed between said walls adjacent their base, the fire box having fire box front and rear walls and a fire box

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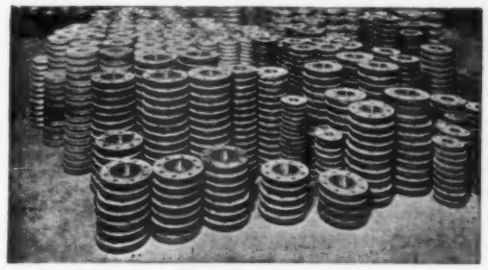

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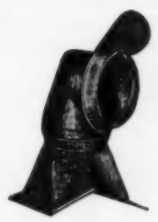

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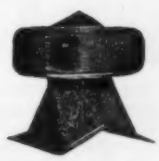

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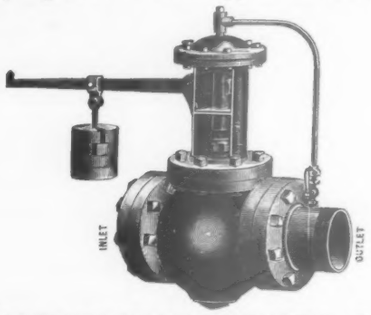

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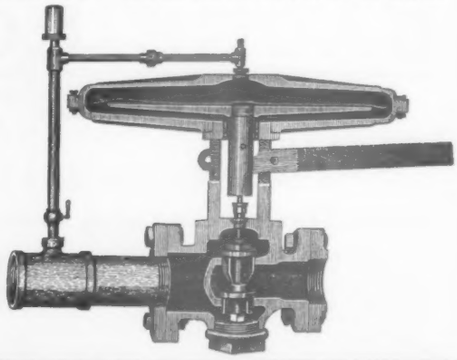

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Crude From Colombia Different From Most Of United States Oils

By L. M. Fanning
New York Bureau, The Oil and Gas Journal, 30 Church St., New York

Crude oil from Colombia, South America, now being run regularly at the New Jersey refineries of the Standard Oil Co. (New Jersey), has characteristics which stamp it as a more or less ideal product in the future economic picture and which at the same time make the product difficult to classify in a competitive relationship to domestic crudes.

The Colombian crude now entering the American market is from the Tropical Oil Co.'s (International Petroleum Co.'s) Infantas structure on the De Mares concession. To date the International has drilled 100 wells on this structure without a failure and with a total potential production of 70,000 bbls. a day. The prospects of increasing the production in this structure and of developing commercial production on other proven structures are encouraging, and, depending on the size of the pipeline outlets to the world's markets, Colombian crude is from now on a factor of increasing importance.

The present pipeline is moving 25,000 to 28,000 bbls. to tidewater daily. This line is being doubled and by early spring next year will be delivering 50,000 bbls. a day regularly. It appears likely that practically all of this crude will go by tanker to the New Jersey company's refineries on the Atlantic Coast, except for occasional shipments to Canadian and foreign refineries. Up to date, practically all of the available Colombian crude has been delivered to the New Jersey refineries and since the arrival of the first cargo in July the company has been running about 25,000 bbls. a day through its plants.

From the standpoint of properties and products Colombian crude is really unique, and is not comparable to any one class of American or Mexican crudes. Rather, it combines outstanding characteristics of crudes from different fields in this country and Mexico, and for this reason the roundly 25,000 bbls. of Colombian crude now coming into the American market cannot be regarded as definitely displacing a like quantity of Mid-Continent crude, or, for that matter, a like quantity of any single type of crude such as California, Gulf Coast or Mexican.

Refining operations have determined that Colombian crude is one of the best naphtha-bearing crudes, not from the standpoint of quantity, but from the standpoint of quality. The gravity of the crude is about 28 degrees A. P. I. On straightrun distillation it yields 25 per cent gasoline of a quality better than Navy specifications.

Yields From Refining

There is no refined oil recovery. The lubricating oil distillate is almost entirely free from wax and is similar to low cold test Coastal lubs. The asphalt content is equivalent in quality to the

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best Mexican asphalt crude. The gas oil is equivalent to Mid-Continent gas oil for cracking, but there is no commercial fuel oil recovery.

The approximate yields on straight refining are:

	Per Cent
Gasoline	25
Gas Oil	20
Lubricating Oils	30
Asphalts	25

With special crudes gaining in importance in the industry in its drive for quality and specialized products, it is apparent that Colombian crude, combining qualities of several special crudes, will fit unusually well in the picture, given a sufficiently broad demand for the particular products which it is capable of yielding.

In point of volume of supply, Colombian crude can scarcely be called a major factor in the crude situation at present and will not be a great factor for some years to come. While its yield of gasoline and gas oil cracking stock, is supplementing other gasoline sources in this country, the fact that the straight-run product, excels Navy specifications, in effect puts it mainly in the class of competing with special gasoline crudes and not with the ordinary gasoline crudes.

In the light of the present rapid trend toward quality gasoline, which trend is having its complement in the automotive industry in the increasing of the compression ration of automobile engines, the demand for crudes with special motor fuel qualifications is on the increase. It is apparent that demand for such crudes will increase until such time as the adjustment now going on in the gasoline and motor industries is completed, and that it may be reflected in an upward revaluation of certain domestic and foreign crudes which yield especially suitable gasolines.

The adjustment is being made slowly and at present demand for special crudes cannot be said to be outstripping the supply but it is apparent that Colombian crude as it becomes increasingly available will play its part in this particular phase of crude oil competition.

Differs From Mid-Continent

It is interesting to note that in connection with Mid Continent crude, the Colombian oil differs in important physical and economic relationship in its lack of content of kerosene, fuel oil and wax, all of which products are increasingly important in profitable refinery operation. For instance, the household oil burner has created a profitable market for a kerosene cut, of which Colombian crude can take no advantage.

Colombian crude, with its low cold-test lubs, comes on the American market at a time when the market is affected by the large production of Gulf Coast crude. As regards asphalt, Colombian crude is stated to yield a product comparable to Panuco crude. The yield, however, is 25 per cent against as high as 60 per cent for Panuco.

The prospects for progressively larger supplies of Colombian crude are, as stated, favorable. The Infantas structure has been proven to the extent of 4,000 acres and its limits have not been defined, so that on the area proven 300 more wells could be drilled on conservative spacing. None of the wells completed so far has reached the greatest depth of the potential oil horizon.

Other Structures

Two other structures have been proven oil bearing but at such a recent date that development work has not progressed to a point where their size can be defined. The La Cira structure is one of these. It is situated nearly a mile west of Infantas and was located in 1925. It has five wells completed with a total yield of 136 barrels a day. San Luis structure is about 20 miles southwest and was proven this year. It has 16 rotary rigs drilling. A fourth structure has been partly proven, making a total of four structures within a radius of 50 miles.

Colombian exports of petroleum in August amounted to 508,135 bbls., compared with 795,000 bbls. exported in July, the

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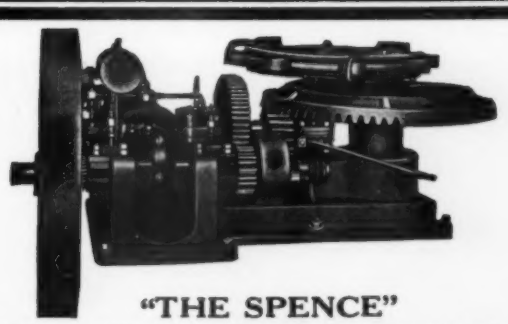

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first month for petroleum exports from the country. This is a decrease of about 33 per cent, attributable to the fact that in July the oil was exported more rapidly than it was pumped from the oil fields into the tanks at the point of shipment, thus leaving practically no surplus on hand at the end of the month. About the middle of August all of the pumping stations along the pipeline from the field to tidewater were completed and began to operate, increasing the capacity of the line from 18,000 bbls. to 28,000 bbls., and it is expected that hereafter and until the completion of the doubling of the line next spring exportation will be maintained at a rate of between 800,000 and 900,000 bbls. a month.

All of the August exports went to the United States with the exception of a shipment of 81,135 bbls. to Southampton.

SOMERSET PIPELINE RUNS SHOW DECREASE

SAN ANTONIO, Tex., Nov. 6.—Pipeline runs from the Somerset Field for September were 58,536 bbls. compared with 65,945 for August. The decrease was not due to lack of production but to the fact that the Southern Refinery Co. at Somerset which has been running about one-third of the oil from the field shut down about the middle of the month and some producers who were running their oil to the Southern company held it in storage on the leases. The Southern refinery is to be sold under foreclosure this week and it is understood will resume operations within a few days. Somerset Field, 18 miles southwest of San Antonio, in Bexar County, reached its high about three years ago when it reached a peak of 3,200 bbls. daily average. It has since been going down very gradually due to few new wells being drilled and the field is meeting the early predictions that it would be long lived. It is producing from the Taylor Marl.

Southton Field, a few miles due south from San Antonio, produced during September a total of 5,794 bbls.

Calliham Field, in McMullen County, during September, produced a total of 3,383 bbls. pipeline runs, compared with 5,650 bbls. for August and with 1,983 bbls. remaining in storage at the end of the month practically the same as the preceding month. Delieveries by the pipeline company at Three Rivers were to Atherton, 1,606 bbls., to R. P. Lightfoot, 280 bbls., to Grubstake Investment Association, 1,224 bbls., and to Missouri Pacific for fuel purposes, 191 bbls.

VENEZUELA OPERATIONS

Venezuelan Petroleum Co. is reported to have acquired 62,500 acres of additional oil lands in the State of Monagas, Venezuela. Of this 25,000 acres are checkerboarded with holdings of Atlantic Refining Co. and the rest is adjacent to holdings of Standard Oil of New Jersey, Standard Oil of California and Gulf Oil Corp. The acquisition brings total holdings of Venezuelan Petroleum Co. to 185,160 acres, of which 122,660 acres are being operated and developed by Gulf Oil Corp. and Standard Oil of California. First well of Gulf Oil Corp. on Venezuelan Petroleum holdings, brought in about two months ago, is reported producing about 5,000 bbls. daily. No. 2, an offset, is drilling at 1,000 feet. No. 3, about 3½ miles from the others, is drilling at 2,500 feet and preparations are being made for extensive drilling.

LAREDO PETROLEUM CLUB

SAN ANTONIO, Tex., Nov. 6.—The Laredo District Petroleum Club has been organized at Laredo with George S. Marshall as president. One of the first things it has taken up is the lack of school facilities for children of oil field workers living in the field. The first school to be provided is in the Aviator and Bruni extension territory. The club has 150 members and is interesting itself in getting better roads built to the various oil fields.

RANNEY OIL MINING COMPANY
LEO RANNEY, President
Oil Mine Engineers
26 Broadway
New York City

BROKAW, DIXON, GARNER & McKEE
GEOLOGISTS
PETROLEUM ENGINEERS
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Estimates of Oil Reserves
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Caracas, Venezuela

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ANDERSON & ANDERSON
Mining Engineers and Petroleum Geologists
721-722 Union Nat'l Bank Bldg.
Wichita, Kansas
Telephone Market 2887

FREDERICK G. CLAPP
Consulting Geologist and Petroleum Engineer
50 Church St., New York City

H. H. HOOD
PETROLEUM ENGINEER AND GEOLOGIST
Explorations, Surveys, Appraisals, Audits, Consultations, Management
Suite 1582 Arcade Bldg.,
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OKMULGEE, OKLA.

CARL B. ANDERSON
GEOLOGIST AND PETROLEUM ENGINEER
941 Kennedy Bldg.,
TULSA, OKLA.

CHARLES T. KIRK
JAMES E. HOOVER
CONSULTING GEOLOGISTS
Tulsa, Oklahoma
Phone 2-2821 329 Atco Bldg.

PHILLIP MAVERICK
PETROLEUM GEOLOGIST
Telephone 93
Ricker & Dodson Bldg.
SAN ANGELO, TEXAS

MARTIN VAN COUVERING
Petroleum Engineer
Formerly Petroleum Engineer California State Mining Bureau
Management of properties, engineering supervision, special reports.
Suite 814 Petroleum Securities Bldg.,
Los Angeles, Cal.
Telephone: TRinity 8171

WHAT AND WHERE TO BUY

A Classified Index of Advertisers in This Publication

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Absorption Plant Equipment—
American Radiator Co.
Braun, C. F., & Co.
Campbell, J. A.
Cooper, C. & G., Co.
Griscom-Russell Co.
National Gas Products Co.
Newton Process Mfg. Co.
Ross Heater & Mfg. Co., Inc.
Southwestern Engineering Co., Inc.
Southwestern Engineering Corp.

Absorption Towers—
Hope Engineering & Supply Co.
National Gas Products Co.
Newton Process Mfg. Co.

Acetylene Apparatus—
Oxweld Acetylene Co.

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Prest-O-Lite Co., Inc.

Acetylene in Cylinders—
Prest-O-Lite Co., Inc.

Agitators—
Kaw Steel Construction Co.
Petroleum Iron Works Co.

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Aluminum Co. of America.

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Spang & Co.

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Northrup Equipment Co.

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Hoover Steel Ball Co.

Balls—Steel—
Atlas Ball Co.
Hoover Steel Ball Co.
Strom Steel Ball Co.

Band Wheels—Steel—
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Marion Mch. Fdy. & Supply Co.
Moore, Lee C., & Co., Inc.
Parkersburg Rig & Reel Co.

Barrels—
Petroleum Iron Works Co.

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Bearings—Roller—
American Roller Bearing Co.
Timken Roller Bearing Co.

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Frick-Reid Supply Co.
Imperial Belting Co.
International Supply Co.
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Stanley Belting Corp.

Belting—Rubber—
Bovaird Supply Co.
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United States Rubber Co.

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Kewanee Boiler Co.
Vogt, Henry, Machine Co.

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Continental Supply Co.
Donovan Boiler Works.
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International Supply Co.
Kewanee Boiler Co.
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Oil Well Supply Co.
Pattin Bros. Co.
Republic Supply Co.
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Sheffield Steel Corp.

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Landis Machine Co.

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Andrews Steel Co.
Heppenstall Forge & Knife Co.

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Dunn Mfg. Co.

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Plibrico Jointless Firebrick Co.

Briquette Machines—
Porter & Co.
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Moore, Lee C., & Co., Inc.
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Ajax Rope Co., Inc.
Columbian Rope Co.
Continental Supply Co.
Frick-Reid Supply Co.
Plymouth Cordage Co.
Wall Rope Works, Inc.

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Frick-Reid Supply Co.
Hazard Mfg. Co.
Leschen, A., & Sons Rope Co.
Murray Tool & Supply Co.
National Supply Co.
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Wickwire-Spencer Steel Corp.
Williamsport Wire Rope Co.

Calf Rope—
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Braden Co.

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Gott, H. P. Mfg. Co.

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Carbon—Black Diamond—
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Patrick, R. S.

Cars—Tank—
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North American Car Co.
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Continental Supply Co.
Emsco Derrick & Equip. Co.
Jarecki Mfg. Co.
National Supply Co.
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Pittsburgh Steel Products Co.
Republic Iron & Steel Co.
South Chester Tube Co.
Spang, Chalfant & Co., Inc.
Superior Tube Co.
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South Chester Tube Co.

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Casing Heads—
Arbon, Paul & Co.
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Hazard Mfg. Co.

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Duriron Co.

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Ohio Steel Foundry Co.
Sivyer Steel Casting Co.

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Sivyer Steel Casting Co.

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Baldwin Chain & Mfg. Co.
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Petroleum Iron Works Co.

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Bignall & Keeler Mch. Works.
Landis Machine Co.

Die Heads—Stationary Pipe Threading—
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Cox & Sons Co., The.
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Cox & Sons Co., The.
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Sherwin-Williams Co.

Engineers—Consulting and Contracting—
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McKee, Arthur G., & Co.
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Barnickel, Wm. S., & Co.
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Busch-Sulzer Bros. Diesel Engine Co.
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Worthington Pump & Machinery Corp.

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Clark Bros. Co.
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Emsco Derrick & Equip. Co.
Foos Gas Engine Co.
Franklin Valveless Engine Co.
Frick-Reid Supply Co.
Hope Engineering & Supply Co.
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International Supply Co.
Jones, S. M., Co.
Marion Mch., Fdy. & Supply Co.
Miller Improved Gas Engine Co.
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Foamite-Childs Corp.

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Reading Steel Casting Co.
Republic Supply Co.
United Iron Works, Inc.
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Walworth Co.

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Duriron Company.

Fittings—Steel—
Dayton Pipe Coupling Co.
Kerotest Mfg. Co.
Ohio Steel Foundry Co.
Walworth Co.

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Jefferson Union Co.
Metric Metal Works.
Walworth Co.

Flange Unions—
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Gaso Pump & Burner Mfg. Co.

Flashlights—
National Carbon Co.

Floating Roofs and Decks—
Chicago Bridge & Iron Works.

Floodlights—
Pyle-National Co.

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Andrews Steel Co.
Harrisburg Pipe & Pipe Bending Co.
Heppenstall Forge & Knife Co.

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Sinclair Refining Co.

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Chicago Bridge & Iron Works.

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McCord Radiator & Mfg. Co.

Gaskets—Fibre—
Durabla Mfg. Co.
Garlock Packing Co.

Gas Masks & Safety Appliances—
Mines Safety Appliance Co.

Gasoline—
Crown Central Petroleum Co.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Sinclair Refining Co.
Skelly Oil Co.

Gasoline—Natural—
Chestnut & Smith Corp.
National Gas Products Co.
Skelly Oil Co.
Warren Petroleum Co.

Gasoline Plant Equipment—
Bessemer Gas Engine Co.
Clark Brothers Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
National Gas Products Co.
Newton Process Mfg. Co.
Ross Heater & Mfg. Co., Inc.
Widdell Engineering Co.

Gas Regulating Casinghead—
Davis, G. M., Regulator Co.
National Gas Products Co.

Gas Scrubbers—
National Gas Products Co.
Newton Process Mfg. Co.

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Durabla Mfg. Co.

Gauge Poles—
Marsh Gauge Pole Co.
Missouri Woodworking Co.

Gauges—Automatic Tank—
Brooks Engineering Co.

Gauges—Draft—
Brown Instrument Co.

Gauges—Oil—
Penberthy Injector Co.

Gauges—Pressure and Vacuum—
Bristol Co.
Brown Instrument Co.
Equitable Meter & Mfg. Co.
Foxboro Co., Inc.
Metric Metal Works.

Gauges—Test—
Equitable Meter & Mfg. Co.
Metric Metal Works.

Gear Driven Pumps (See Pumps)

Gears—Cut—
Nuttall, R. D., & Co.

Gears—Reduction—
Emsco Derrick & Equip. Co.
Nuttall, R. D., & Co.

Gears—Reverse—
Emsco Derrick & Equip. Co.

Generators—
Westinghouse Electric & Mfg. Co.

Generators—Acetylene—
Oxweld Acetylene Co.

Generators—Turbine—
Moon Manufacturing Co.
Pyle-National Co.
Westinghouse Electric & Mfg. Co.

Glassware—Chemical for Laboratory Use—
Illinois Glass Co.

Governors—
Equitable Meter & Mfg. Co.
Gardner Governor Co.

Governors—Boiler Feed—
Chaplin-Fulton Mfg. Co.
Fisher Governor Co.

Grating—Steel—
Blaw-Knox Co.

Grey Iron Castings (See Castings)

H

Hammers—Chipping and Calking Pneumatic—
Chicago Pneumatic Tool Co.

Hammers—Riveting Pneumatic—
Chicago Pneumatic Tool Co.

Hangers—Iron and Steel—
Continental Supply Co.
Dodge Mfg. Corp.

Hangers—Tubing—
Hercules Tool Co.

Hatches—Gauges and Thief—
Oil Conservation Engineering Co.

Heat Exchangers—
Carbondale Machine Co.
Griscom-Russell Co.
Hope Engineering & Supply Co.
National Gas Products Co.
Newton Process Mfg. Co.
Ross Heater & Mfg. Co.
Southwestern Engineering Co., Inc.
Southwestern Engineering Corp.

Heat Interchangers—Fluid—
Braun, C. F., & Co.
Ross Heater & Mfg. Co., Inc.

Hoists—Pneumatic, Geared and Universal—
Chisholm-Moore Mfg. Co.
Yale & Towne Mfg. Co.

Hoists—Portable—
Chisholm-Moore Mfg. Co.
Ford Chain Block Co.
Sullivan Machinery Co.
Wright Mfg. Co.
Yale & Towne Mfg. Co.

Hooks for Rods and Tubing—
B. & A. Specialty Co.
Dunn Mfg. Co.

Hose—
Fenwick-Reddaway Mfg. Co.

Hose—Drillers—
Goodrich, B. F., Rubber Co.
United States Rubber Co.

Hose—Oil Suction and Discharge
Goodrich, B. F., Rubber Co.
United States Rubber Co.

Hose—Rubber—
Goodyear Tire & Rubber Co.
United States Rubber Co.

Hypochlorite of Lime—
Mathieson Alkali Works, Inc.

I

Injectors—
Penberthy Injector Co.

Inspectors—Pipe—
Hunt, Robert W., Co.

Insulation Materials—
General Insulating & Mfg. Co.
Johns-Manville, Inc.

Insurance—Fire—
Oil Insurance Association.

Insurance—Tornado—
Oil Insurance Association.

Iron—Ingot—
American Rolling Mill Co.

J

Jacks—Hydraulic—
Bridgeport Machine Co.

Jacks—Lifting—
Templeton, Kenly & Co., Ltd.

Jacks—Pumping—
American Mfg. Co. of Texas.
American Well Works.
Bessemer Gas Engine Co.
Braden Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
Kansas City Hay Press Co.
Norris, W. C.
Spang & Co.

Jars—
Arbon, Paul & Co.
Bridgeport Machine Co.
Spang & Co.

Jar Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

K

Kerosene—
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.

L

Lacquers—
Arco Company, The.
Sherwin-Williams Co.

Lanterns—Electric—
Delta Electric Co.

Lead and Mixed Metal Products—
Eagle-Picher Lead Co.
National Lead Co.

Lead in Oil—
Eagle-Picher Lead Co.
National Lead Co.

Lead Wool and Containers—
Eagle-Picher Lead Co.

Lighting Equipment—
Pyle-National Co.
Westinghouse Electric & Mfg. Co.

Litharge—
Eagle-Picher Lead Co.
National Lead Co.

Loaders—Trucks—
Barber-Greene Co.

Long Distance Telephone—
American Telephone & Telegraph Co.

Lubricating Devices—
McCord Radiator & Mfg. Co.

Lubricators—
Ajax Iron Works.
Lunkenheimer Co.

Lubricators—Force Feed—
Hills-McCanna Co.
McCord Radiator & Mfg. Co.
Mansel Brothers Co.

M

Machine Tools—
Ryerson, Jos. T., & Sons, Inc.

Manholes—Tank—
Brooks Engineering Corp.

Manifolds—
Reid, Joseph, Gas Engine Co.

Meters—Gas—
Equitable Meter & Mfg. Co.
Foxboro Co., Inc.
Metric Metal Works.
Pittsburgh Meter Co.
Roots, P. H. & F. M., Co.
Westcott & Greis.

Meters—Electric—
Brown Instrument Co.

Meters—Gasoline—
Pittsburgh Meter Co.

Meters—Oil—
Pittsburgh Meter Co.

Molded Goods—Rubber—
Garlock Packing Co.
Goodyear Tire & Rubber Co.

Motors—Electric—
Fairbanks-Morse & Co.
Westinghouse Electric & Mfg. Co.

Motors—Gasoline (See Engines—Gasoline)—

N

Naphtha—
Pure Oil Co.

Natural Gasoline (See Gasoline—Natural)—

Natural Gasoline Plant Equipment—
Campbell, J. A.
Cooper, C. & G., Co.
Griscom-Russell Co.
National Gas Products Co.
Roots, P. H. & F. M., Co.
Ross Heater & Mfg. Co., Inc.
Smith Separator Co.
Westcott & Greis.

Nitrogen—
Linde Air Products Co.

Nozzles—Spray—
Power Plant Equipment Co.

O

Oil and Gas Pipe Line Construction—
Hope Engineering & Supply Co.

Oil Burners (See Burners—Oil)—

Oil Field Equipment—
Baker Casing Shoe Co.
Bridgeport Machine Co.
Gaso Pump & Burner Mfg. Co.
International Derrick & Equipment Co.
Iron King Mfg. Co.
Kaw Steel Construction Co.
National Supply Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.
Reed Roller Bit Co.
Regan Forge & Engineering Co.
Reid, Joseph, Gas Engine Co.
Republic Supply Co.
Simplex Euipment Co.
Trumble Gas Trap Co.

Oil—Fuel—
Crown Central Petroleum Corp.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Sinclair Refining Co.
Texas Company, The.

Oil—Gas—
Crown Central Petroleum Co.
Gulf Refining Co.
Pure Oil Co.
Sinclair Refining Co.
Texas Company, The.

Oil—Lubricating—
Barnsdall Refining Co.
Crown Central Petroleum Corp.
Empire Refineries, Inc.
Gulf Refining Co.
Humble Oil & Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Sinclair Refining Co.
Skelly Oil Co.
Texas Company, The.

Oil—Tractor—
Barnsdall Refining Co.
Gulf Refining Co.
Pure Oil Co.
Skelly Oil Co.

Oiling Devices—
Lunkenheimer Co.

Oil Meters (See Meters)—

Oil Piping Equipment (See Fittings)—

Oil Reclaiming Process—
Barnickel, Wm. S., & Co.

Oil Well Cementing—
Halliburton Oil Well Cementing Co.

Oil Well Tools—
D. & B. Pump & Supply Co.
Hinderliter Tool Co.
Reed Roller Bit Co.
Titusville Forge Co.
U. S. Tool Co.

Over Shots—
Reed Roller Bit Co.
Regan Forge & Engineering Co.

Oxygen—
Linde Air Products Co.

P

Packer Release—
Acme Fishing Tool Co.

Packers—
Goodyear Tire & Rubber Co.
Guiberson Corp.
Larkin & Co.
Layne & Bowler Co.
Meier, E. C., Lubricating Co.
Oil Well Supply Co.
Regan Forge & Engineering Co.
Spang & Co.
United States Rubber Co.

Packing—
Crane Packing Co.
Durabla Mfg. Co.
Goodrich, B. F., Rubber Co.
Imperial Belting Co.
Johns-Manville, Inc.

Packing—Metallic—
Crane Packing Co.
Garlock Packing Co.

Paints—
Aluminum Co. of America.
American Asphalt Paint Co.
Arco Company, The
Detroit Graphite Co.
Dixon, Joseph, Crucible Co.
Du Pont de Nemours, E. I. & Co., Inc.
Eagle-Picher Lead Co.
Eclipse Paint & Mfg. Co.
Hill, Hubbell & Co.
National Lead Co.
Sherwin-Williams Co.
St. Louis Surfacer & Paint Co.

Pipe—Cast Iron—
Greenspon's Jos., Sons Iron & Steel Co.
International Supply Co.
U. S. Cast Iron Pipe & Fdy. Co.

Pipe—Lead Chemical and Antimonial—
Eagle-Picher Lead Co.
National Lead Co.

Pipe—Steel—
Central Tube Co.
Continental Supply Co.
Greenspon's Jos., Sons Iron & Steel Co.
Jarecki Mfg. Co.
Kellogg, M. W., Co.
Murray Tool & Supply Co.
National Supply Co.
National Tube Co.
Republic Iron & Steel Co.
Ryerson, Jos. T., & Sons, Inc.
South Chester Tube Co.
Spang, Chalfant & Co., Inc.
Superior Tube Co.
Taubman Supply Corp.
Wheeling Steel Corp.

Pipe—Wrought Iron—
Byers, A. M., Co.
Frick-Reid Supply Co.
Greenspon's, Jos., Sons Iron & Steel Co.
Oil Well Supply Co.
Reading Iron Co.
South Chester Tube Co.
Superior Tube Co.
Taubman Supply Corp.

Pipe and Nipple Threading Machines—
Bignall & Keeler Mch. Works.
Cox & Sons Co., The
Landis Machine Co.
Ryerson, Jos. T., & Sons, Inc.
Standard Engineering Co.

Pipe Clamps (See Clamps—Pipe)

Pipe Grips—
Larkin & Co.

Pipe Headers—
National Tube Co.
Newton Process Mfg. Co.

Pipe Line Coatings—
Hill, Hubbell & Co.

Pipe Line Construction Tools—
National Transit Pump & Machine Co.

Pipe Line Equipment—
Gaso Pump & Burner Mfg. Co.

Pipe Screwing Machines—
Buckeye Traction Ditcher Co.

Pipe Straightening Machines—
W-K-M Co., Inc.

Pipe Suspension Device—
Stearns-Roger Mfg. Co.

Pipe Threaders—Power—
Williams Tool Corp.

Pipe Tools—
Armstrong Brothers Tool Co.
Nye Tool & Machine Works
Ridge Tool Co.
Walworth Co.

Piping—Fabricated—
Midwest Piping & Supply Co.

Piping—Hard Rubber—
United States Rubber Co.

Piping—Steel & Iron—
Crane Co.
Greenspon's Jos., Sons Iron & Steel Co.
Power Piping Co.

Pistons—
Guiberson Corp.
Heppenstall Forge & Knife Co.

Pistons—Expansion—
Wilson Oil Tools Corp.

Pistons—Slush Pump—
Guiberson Corp.

Plugs—Bottom Water—
Guiberson Corp.

Pre-Heaters—
National Gas Products Co.
Newton Process Mfg. Co.
Ross Heater & Mfg. Co., Inc.

Preservatives—Asphalt—
American Asphalt Paint Co.

Pulleys—Wood, Iron and Steel—
Continental Supply Co.
Dodge Mfg. Co.

Pulling Machines—
Iron King Mfg. Co.
National Supply Co.
Safety Pulling Machine Co.

Pumpers—Long Stroke—
Farley Machine Co.

Pumping and Pulling Motors—Electric—
Westinghouse Electric & Mfg. Co.

Pumping Equipment—
American Well Works
Axelson Machine Co.
Byron Jackson Pump Mfg. Co. Inc.
D. & B. Pump & Supply Co.
Farley Machine Co.
Goulds Pumps, Inc.
Jones, S. M., Co.
Myers, F. E., & Bros., Co.
Northrup Equipment Co.
Oil Well Supply Co.
Prescott Co.
Ratigan, J. P., Co.
Waukesha Motor Co.

Pumping Gear Units—
Nuttall, R. D., & Co.

Pumping Powers—
Bessemer Gas Engine Co.
Buda Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
Kansas City Hay Press Co.
Marion Mch., Fdy. & Supply Co.
National Supply Co.
Oil Well Supply Co.
Pattin Bros. Co.
Reid, Joseph, Gas Engine Co.
Spence Machine Co.
Titusville Iron Works Co.

Pumps—Acid Proof—
Duriron Company

Pumps—Boiler Feed—
Ajax Iron Works
Byron Jackson Pump Mfg. Co. Inc.
Fairbanks-Morse & Co.
Gardner Governor Co.
Goulds Pumps, Inc.
Oil Well Supply Co.
Smith Separator Co.

Pumps—Centrifugal—
American Wells Works
Byron Jackson Pump Mfg. Co. Inc.
Fairbanks-Morse & Co.
Goulds Pumps, Inc.
Smith Separator Co.
Worthington Pump & Machinery Corp.

Pumps—Direct Driven—
Bessemer Gas Engine Co.
Smith Separator Co.

Pumps—Electric—
Prescott Co.
Smith Separator Co.

Pumps—Fuel Oil Service—
Blackmer Pump Co.
Goulds Pumps, Inc.
Northern Fire Apparatus Co.
Smith Separator Co.

Pumps—Fuel Oil Transfer—
Blackmer Pump Co.
Byron Jackson Pump Mfg. Co. Inc.

Pumps—Gasoline and Oil for Filling Stations—
Gilbert & Barker Mfg. Co.

Pumps—Gear Driven—
Gaso Pump & Burner Mfg. Co.
Lucey Mfg. Corp.
Prescott Co.
Smith Separator Co.

Pumps—Hot Oil—
Blackmer Pump Co.
Byron Jackson Pump Mfg. Co. Inc.
Goulds Pumps, Inc.
Smith Separator Co.

Pumps—Pipe Line—
Byron Jackson Pump Mfg. Co. Inc.
Frick-Reid Supply Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Goulds Pumps, Inc.
National Transit Pump & Machine Co.
Prescott Co.
Worthington Pump & Machinery Corp.

Pumps—Portable—
Gaso Pump & Burner Mfg. Co.

Pumps—Power—
Fairbanks-Morse & Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Goulds Pumps, Inc.
Myers, F. E., Bro. & Co.
National Transit Pump & Machine Co.
Prescott Co.
Smith Separator Co.
Waukesha Motor Co.

Pumps—Refinery—
Blackmer Pump Co.
Byron Jackson Pump Mfg. Co., Inc.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Goulds Pumps, Inc.
National Transit Pump & Machine Co.
Northern Fire Apparatus Co.
Smith Separator Co.

Pumps—Rotary—
Blackmer Pump Co.
Goulds Pumps, Inc.
Northern Fire Apparatus Co.
Roots, P. H. & F. M., Co.

Pumps—Sand—
Bridgeport Machine Co.
Larkin & Co.
Smith Separator Co.

Pumps—Slush—
Gardner Governor Co.

Pumps—Steam—
Fairbanks-Morse & Co.
Frick-Reid Supply Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Lucey Mfg. Corp.
National Transit Pump & Machine Co.
Oil Well Supply Co.
Prescott Co.
Smith Separator Co.

Pumps—Suction—
Gaso Pump & Burner Mfg. Co.

Pumps—Vacuum—
Bessemer Gas Engine Co.
Chicago Pneumatic Tool Co.
Clark Brothers Co.
Gaso Pump & Burner Mfg. Co.
Miller Improved Gas Engine Co.
Roots, P. H. & F. M., Co.
Ross Heater & Mfg. Co., Inc.
Smith Separator Co.

Pumps—Water—
American Well Works
Byron Jackson Pump Mfg. Co., Inc.
Gaso Pump & Burner Mfg. Co.
Goulds Pumps, Inc.
Northern Fire Apparatus Co.
Prescott Co.
Smith Separator Co.

Pyrometers—
Brown Instrument Co.
Republic Flow Meters Co.

R

Ratchet Pipe Cutters—
Toledo Pipe Threading Machine Co.

Ratchet Pipe Threaders—
Nye Tool & Machine Works
Toledo Pipe Threading Machine Co.

Ratchet Reamers—
Nye Tool & Machine Works

Ratchet Stocks and Dies—
Nye Tool & Machine Works
Toledo Pipe Threading Machine Co.

Receiving Boxes—
Reid, Joseph, Gas Engine Co.

Recorders—Differential Pressure—
Equitable Meter & Mfg. Co.
Metric Metal Works
Pittsburgh Meter Co.

Refinery Equipment—
American Radiator Co.
Blaw-Knox Co.
Braun, C. F., & Co.
Carbondale Machine Co.
Chicago Bridge & Iron Works
Graver Corp.
Griscom-Russell Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
Newton Process Mfg. Co.
Petroleum Appliance Co.
Petroleum Iron Works Co.
Power Piping Co.
Power Specialty Co.
Reid, Joseph, Gas Engine Co.
Ross Heater & Mfg. Co., Inc.
Ross-Meehan Foundries
Smith, A. O., Corp.
Smith Separator Co.
Southwestern Engineering Co., Inc.
Southwestern Engineering Corp.
United Iron Works, Inc.
Universal Oil Products Co.
Vogt, Henry, Machine Co.
Walsh & Weidner Boiler Co.
Westcott & Greis
Widdell Engineering Co.

Refractories—Furnace, Stills and Baffles—
National Gas Products Co.

Refrigerating Machinery—
Carbondale Machine Co.
United Iron Works, Inc.
Vogt, Henry, Machine Co.

Regulators—
Fisher Governor Co.
Gilfillan Machine Works
Smith Separator Co.

Regulators—Gas—
Chaplin-Fulton Mfg. Co.
Davis, G. M., Regulator Co.
Equitable Meter & Mfg. Co.
Fisher Governor Co.
Metric Metal Works
National Gas Products Co.
Smith Separator Co.

Rental Service—
Bridgeport Machine Co.

Reversible Clutches—
Bessemer Gas Engine Co.

Rig Irons—
International Supply Co.
Lucey Mfg. Corp.
National Supply Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.

Rigs—Drilling, All Steel—
International Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.

Rigs—Portable Drilling—
National Supply Co.
National Turnbuckle Derrick Co.
Star Drilling Machine Co.

Rod Guides—
Meier, E. C., Lubricating Co.

Rods—Gauge—
Missouri Wood Working Co.

Rods—Polish—
Jones, S. M., Co.

Rods—Pull—
Axelson Machine Co.
Columbus Sucker Rod Co.
Jones, S. M., Co.
Sheffield Steel Corp.

Rods—Sucker—
Axelson Machine Co.
Columbus Sucker Rod Co.
D. & B. Pump & Supply Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
National Supply Co.
Oil Well Supply Co.
Republic Supply Co.
Sheffield Steel Corp.

Rods—Valve—
Jones, S. M., Co.

Roofing—Asbestos—
Johns-Manville, Inc.

Roofing—Galvanized Iron—
American Rolling Mill Co.

Rope Socket Metal—
Eagle-Picher Lead Co.

Rope—Manila—
Ajax Rope Co., Inc.
Bovaird Supply Co.
Republic Supply Co.

Rope—Wire—
Ajax Rope Co., Inc.
Bovaird Supply Co.
Bridgeport Machine Co.
Broderick & Bascom Rope Co.
International Supply Co.
Jarecki Mfg. Co.
Wickwire-Spencer Steel Corp.
Leschen, A., & Sons, Rope Co.
Williamsport Wire Rope Co.

Rotary Bit Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

Rotary Drilling Equipment—
Emsco Derrick & Equip. Co.
Frick-Reid Supply Co.
International Derrick & Equipment Co.
Link-Belt Co.
Lucey Mfg. Co.
National Supply Co.
Oil Well Supply Co.
Republic Supply Co.
Titusville Iron Works Co.

Rotary Lines (See Rope—Wire)—

Rotary Post—
Reed Roller Bit Co.

Rotary Tool Joints—
Bartlesville Supply Co.
Hughes Tool Co.

Rust Preventatives—
Dearborn Chemical Co.
Eagle-Picher Lead Co.

S

Sand Lines—Manila—
Ajax Rope Co., Inc.
Plymouth Cordage Co.

Sand Lines—Wire—
Ajax Rope Co., Inc.
Broderick & Bascom Rope Co.
Hazard Mfg. Co.
Wickwire-Spencer Steel Corp.

Screens—Oil Well—
Layne & Bowler Co.

Screens—Water Well—
Layne & Bowler Co.

Screws Temper—
Burns Tool Co.

Securities—Oil—
Pforzheimer, Carl H., & Co.

Separators—Centrifugal—
Miller, Max B., & Co.

Separators—Gas and Oil—
Smith Separator Co.

Separators—Steam—
Vois Engineering Equipment Co.

Sheet Lead—Chemical and Antimonial—
Eagle-Picher Lead Co.

Sheets—Corrugated, Black and Galvanized—
American Rolling Mill Co.
American Sheet & Tin Plate Co.
Ryerson, Jos. T., & Son, Inc.
United Alloy Steel Corp.

Sheets—Iron—
American Rolling Mill Co.

Sheets—Steel—
American Rolling Mill Co.
American Sheet & Tin Plate Co.
Sheffield Steel Corp.
United Alloy Steel Corp.

Shingles—Asbestos—
Johns-Manville, Inc.

Siding—Galvanized Iron—
American Rolling Mill Co.

Sleeves—
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.

Sleeves—Split—
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.

Smoke Stacks—
Donovan Boiler Works

Snuffers—Fire—
Simplex Equipment Co.

Sockets—
Acme Fishing Tool Co.
Bridgeport Machine Co.
Spang & Co.

Sockets—Sucker Rod—
Guiberson Corp.

Sockets—Swivel—
Arbon, Paul & Co.

Sockets—Wire Rope—
Chicago Steel Foundry Co.

Soda Ash—
Mathieson Alkali Works, Inc.

Soda—Caustic—
Mathieson Alkali Works, Inc.

Solders—Bar and Wire—
Eagle-Picher Lead Co.
Hoyt Metal Co.

Spark Plugs—
Mosler Metal Products Corp.

Spears—
Acme Fishing Tool Co.
Brown Tool Co., Inc.

Sprockets—Power Transmission—
Ajax Iron Works
Chain Belt Co.

Stands—Vise—
Nye Tool & Machine Works

Steel—All Kinds—
Ryerson, Jos. T., & Son, Inc.

Steel—Alloy—
Central Steel Co.
Timken Roller Bearing Co.
United Alloy Steel Corp.

Steel—Bit—
Central Steel Co.
United Alloy Steel Corp.

Steel—Hot Rolled Strip—
Central Steel Co.

Steel—Special—
Andrews Steel Co.
Central Steel Co.
United Alloy Steel Corp.

Steel Fabricators—Structural—
Austin Co.
Braden Co.
Graver Corp.
International Derrick & Equipment Co.

Steel Pitmans—
International Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.

Steel Plate Construction—
Chicago Bridge & Iron Works
Graver Corp.
Kaw Steel Construction Co.
Pennsylvania Engineering Works
Petroleum Iron Works Co.
Vogt, Henry, Machine Co.

Steel Wheel and Tug Rims—
International Derrick & Equipment Co.

Still Insulation—
Celite Products Co.

Stills—
Blaw-Knox Co.
Graver Corp.
Kaw Steel Construction Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
Newton Process Mfg. Co.
Petroleum Iron Works Co.
Smith, A. O., Corp.
Vogt, Henry, Machine Co.
Widdell Engineering Co.

Stocks and Dies—
Borden Co.
Nye Tool & Machine Works
Toledo Pipe Threading Machine Co.

Stuffing Boxes—
Axelson Machine Co.
Kansas City Hay Press Co.

Sulphuric Acid—
Eagle-Picher Lead Co.

Superheaters—Steam—
Power Plant Equipment Co.

Swabs—
Arben, Paul, & Co.
Burt Corporation
Guiberson Corp.
Simplex Equipment Co.

Swedge Nipples—
Dresser, S. R., Mfg. Co.
Harrisburg Pipe & Pipe Bending Co.

Swing Line Equipment—
Brooks Engineering Corp.

Swivels—
Layne & Bowler Co.
Lucey Mfg. Corp.
Titusville Iron Works Co.

T

Tachometers—
Brown Instrument Co.

Tank Equipment—
Brooks Engineering Corp.
Oil Conservation Engineering Co.

Tank Insulation—
Celite Products Co.

Tanks—Bolted—
Butler Mfg. Co.
Columbian Steel Tank Co.
Maloney Tank Mfg. Co.
Parkersburg Rig & Reel Co.

Tanks—Bulk Station—
Butler Mfg. Co.
Graver Corp.

Tanks—Cylindrical—
Graver Corp.
Petroleum Iron Works Co.

Tanks—Elevated Steel—
Chicago Bridge & Iron Works
Graver Corp.

Tanks—Field Storage—
American Car & Foundry Co.
Chicago Bridge & Iron Works
Donovan Boiler Works
Graver Corp.
Kaw Steel Construction Co.
Kewanee Boiler Co.
Maloney Tank Mfg. Co.
Petroleum Iron Works Co.
Pittsburgh-Des Moines Steel Co.
Riter-Conley Co.
United Iron Works, Inc.

Tanks—Horizontal Storage—
Graver Corp.
Kaw Steel Construction Co.
Maloney Tank Mfg. Co.

Tanks—Run Down—
Chicago Bridge & Iron Works
Donovan Boiler Works
Graver Corp.
Kaw Steel Construction Co.
Newton Process Mfg. Co.

Tanks—Truck—
Butler Mfg. Co.
Columbian Steel Tank Co.

Tanks—Underground—
Butler Mfg. Co.
Gilbert & Barker Mfg. Co.
Graver Corp.
Kewanee Boiler Co.
Pittsburgh-Des Moines Steel Co.

Tanks—Welded—
Chicago Bridge & Iron Works
Graver Corp.
Pennsylvania Engineering Works

Taper Taps—
Hughes Tool Co.

Tapes—Measuring for Oil Gauging—
Lufkin Rule Co.
States Engineering Co.

Thermometers—Indicating and Recording—
American Shaeffer & Budenberg Corp.
Bristol Co.
Brown Instrument Co.
Foxboro Co., Inc.

Thermometers—Resistance—
Brown Instrument Co.

Threading Machines—
Bignall & Keeler Machine Wks.
Cox & Sons Co., The
Landis Machine Co.

Thread Protectors—
Spang & Co.

Tires—Automobile—
Continental Supply Co.

Tires—Pneumatic & Solid—
Kelly-Springfield Tire Co.

Tires—Truck—
Kelly-Springfield Tire Co.

Tongs—
Bridgeport Machine Co.
Wilson Oil Tools Corp.

Tongs—Back Up—
Williams, J. H., & Co.

Tongs—Break Out—
Reed Roller Bit Co.
Williams, J. H., & Co.

Tongs—Casing—
Dunn Mfg. Co.
Guiberson Corp.

Tongs—Chain Pipe—
Armstrong Bros. Tool Co.
Williams, J. H., & Co.

Tongs—Pipe—
National Transit Pump & Machine Co.

Tongs—Rotary—
Dunn Mfg. Co.

Tongs—Tool Joint—
Guiberson Corp.
Hughes Tool Co.
Reed Roller Bit Co.

Tongs—Tubing—
Dunn Mfg. Co.

Tool Chests—Pipe—
Nye Tool & Machine Works

Tool Joints—
Bridgeport Machine Co.
Federal Supply Co.
Hughes Tool Co.
Lucey Mfg. Corp.
Oil Well Supply Co.
Regan Forge & Engineering Co.

Torches—
Oxweld Acetylene Co.

Towers—
Graver Corp.

Tractors—
Cleveland Tractor Co.
International Harvester Co. of America.

Trailers—
Spencer Trailer Co.

Transmission Belt—Rubber—
Goodrich, B. F. Rubber Co.
United States Rubber Co.

Transmission Lining—
Stanley Belting Corp.

Traveling Block—
Lucey Mfg. Corp.
Regan Forge & Engineering Co.
Wright Mfg. Co.

Trenchers—Vertical Boom—
Barber-Greene Co.

Trucks—Motor—
Ford Motor Co.
General Motors Truck Co.
Graham Brothers
International Harvester Co. of America

Tubes—Boiler, Charcoal Iron—
Byers, A. M., Co.
Reading Iron Co.

Tubes—Boiler Steel—
Continental Supply Co.
National Tube Co.
Ryerson, Jos. T., & Sons., Inc.

Tubing—
Babcock & Wilcox Tube Co.
Byers, A. M., Co.
Central Tube Co.
Continental Supply Co.
National Tube Co.
Pittsburgh Steel Products Co.
Reading Iron Co.
Republic Iron & Steel Co.
South Chester Tube Co.
Spang, Chalfant & Co., Inc.
Superior Tube Co.
Wheeling Steel Corp.

Tubing Catchers—
Dunn Mfg. Co.
Guiberson Corp.

Tubing Protectors (See Rod Guides)—

Tubular Goods—
Babcock & Wilcox Tube Co.
Central Tube Co.
Continental Supply Co.
Oil Well Supply Co.
Pittsburgh Steel Products Co.
Republic Iron & Steel Co.
Spang, Chalfant & Co., Inc.
Wheeling Steel Corp.

Tubular Goods—Wrought Iron—
Byers, A. M., Co.
Reading Iron Co.

Turbines for Lighting Equipment
Lucey Mfg. Corp.
Westinghouse Electric & Mfg. Co.

U

Undereamer Body Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

Underreamers—
Bridgeport Machine Co.
Brown Tool Co., Inc.
Guiberson Corp.
Wilson Oil Tools Corp.

Unions—
Central Forging Co.
Dart, E. M., Mfg. Co.
Jefferson Union Co.

V

Valuations—
American Appraisal Co.

Valves—Blow-Off—
Homestead Valve Mfg. Co.
Merco Nordstrom Valve Co.

Valves—Brass & Bronze—
Homestead Valve Mfg. Co.
Lunkenheimer Co.
Reading Steel Casting Co.
Walworth Co.

Valves—Cast Steel—
Chapman Valve Mfg. Co.
Homestead Valve Mfg. Co.
Walworth Co.

Valves—Check—
Gaso Pump & Burner Mfg. Co.
Lunkenheimer Co.
Walworth Co.

Valves—Drop Forged Steel—
Edward Valve & Mfg. Co.
Vogt, Henry, Machine Co.

Valves—Gate—High and Low Pressure—
Chapman Valve & Mfg. Co.
Crane Co.
Darling Valve & Mfg. Co.
Kennedy Valve Mfg. Co.
Kerotest Mfg. Co.
Ludlow Valve Mfg. Co.
Lunkenheimer Co.
Murray Tool & Supply Co.
Powell, Wm., Co.
Walworth Co.

Valves—Iron—
Chapman Valve Mfg. Co.
Lunkenheimer Co.
Merco Nordstrom Valve Co.
Reading Steel Casting Co.
Walworth Co.

Valves—Metal Pump—
Durabla Mfg. Co.

Valves—Pump—
Garlock Packing Co.
United States Rubber Co.

Valves—Relief—Supersensitive—
Davis, G. M., Regulator Co.

Valves—Steel—
Chapman Valve Mfg. Co.
Edward Valve Mfg. Co.
Kerotest Mfg. Co.
Lunkenheimer Co.
Metric Metal Works
Powell, Wm., Co.
Reading Steel Casting Co.
Walworth Co.

Valves—Tank Vent—
Brooks Engineering Corp.
Oil Conservation Engineering Co.

Valves—Working Barrel—
Atlas Ball Co.
Axelson Machine Co.
D&B Pump & Supply Co.
Hough, Charles N., Mfg. Co.
Northrup Equipment Co.
Oil Well Supply Co.

Varnishes—
Arco Company, The
Detroit Graphite Co.
Sherwin-Williams Co.

Ventilators—Roof—
Burt Mfg. Co.

Vises—Bench—
Nye Tool & Machine Works

Vises—Pipe—
Nye Tool & Machine Works

Vises—Post—
Nye Tool & Machine Works

W

Wagons—Truss Wheel—
Athey Truss Wheel Co.

Walking Beams—Steel—
Emsco Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.

Water Cooling Systems—
Power Plant Equipment Co.

Waterproofings—Concrete—
Master Builders Co.

Waterproofing Materials—
Celite Products Co.

Water Softeners and Filters—
Butler Mfg. Co.
Graver Corp.

Wax—
Barnsdall Refining Co.
Gulf Refining Co.
Pure Oil Co.

Weight Indicators—
Hughes Tool Co.

Welding Accessories—Electric—
Wilson Welder & Metals Co.

Welding and Cutting Apparatus—
Oxweld Acetylene Co.

Welding Machines—Electric—
Wilson Welder & Metals Co.

Welding Supplies—
Oxweld Acetylene Co.

Welding Wire—
Frick-Reid Supply Co.
Oxweld Acetylene Co.
Wilson Welder & Metals Co.

Well Shooting—
Eastern Torpedo Co.
Kinley, M. M.
Zero Hour Torpedo Co.

Wheels—Pipe Cutter—
Nye Tool & Machine Works

Winches—
Braden Co.
Brooks Engineering Co.
Oil Conservation Engineering Co.

Wire Lines (See Cables—Steel)—

Wood Patterns and Models—
Gaso Pump & Burner Mfg. Co.

Working Barrels—
Axelson Machine Co.
D&B Pump & Supply Co.
D. & N. Specialty Co.
Franklin Valveless Engine Co.
Frick-Reid Supply Co.
Hough, Charles N., Mfg. Co.
McGregor, Working Barrel Co.
Norris, W. C.
Northrup Equipment Co.
Oil Well Supply Co.

Wrenches—Closet Spuds—
Nye Tool & Machine Works

Wrenches—Drop Forged—
Williams, J. H., & Co.

Wrenches—Pipe—
Trimont Mfg. Co.
Walworth Co.

Wrenches—Ratchet—
Dresser, S. R., Mfg. Co.
Nye Tool & Machine Works

Z

Zinc Oxide—
Eagle-Picher Lead Co.

Oklahoma-Kansas and Eastern Pipeline Report

OKLAHOMA-KANSAS

Pipeline Statement for September Runs

Company	Month Bbls.	Daily Av. Bbls.
*Prairie Pipe Line Co.	3,990,000	133,000
Gulf Pipe Line Co.	1,198,258	39,942
Texas Pipe Line Co.	590,846	19,695
Magnolia Pet. Co.	1,047,406	34,914
Empire Pipe Line Co.	682,783	22,759
Cosden Pipe Line Co.	840,847	28,028
*Sinclair Pipe Line Co.	1,979,470	65,981
*Other lines	7,590,000	253,000
Total September	17,919,610	597,319
Total August	18,240,610	591,632
Difference	321,000	5,687

Shipments

	Month	Daily Av.
Prairie Pipe Line Co.	3,906,979	130,233
Gulf Pipe Line Co.	1,246,598	41,553
Texas Pipe Line Co.	661,971	22,066
Magnolia Petroleum Co.	1,161,487	38,716
Empire Pipe Line Co.	855,063	28,505
Cosden Pipe Line Co.	793,153	26,438
†Sinclair Pipe Line Co.	2,422,201	80,730
*Other lines	7,500,000	250,000
Total September	18,547,452	618,241
Total August	19,907,618	642,181
Difference	1,360,166	23,940

Stocks

	Bbls.
*Prairie Oil and Gas Co.	27,500,000
*Prairie Pipe Line Co.	2,000,000
Gulf P. L. & Gypsy Oil Co.	6,564,128
The Texas Company	2,973,762
Magnolia Petroleum Co.	3,772,459
Empire Pipe Line Co.	2,252,342
Mid-Continent Petroleum Corp.	1,969,349
*Sinclair Crude Oil Purchasing Co.	17,300,000
Carter Oil Co.	12,703,047
*Other lines	9,000,000
Total September	86,035,087
Total August	86,700,316
Difference	665,229

*Estimated. †Includes, also Texas and Wyoming crude oil.

Note—Stocks do not include approximately 4,200,000 bbls. of crude oil held in storage on private tank farms and leases.

EASTERN PIPE LINES

Runs From Wells

In the following table will be found the regular receipts from wells by various pipelines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for August and September:

	Aug., '26	Sept., '26
Nat. Transit	161,323.78	157,017.84
S. W. Pa. P. L.	96,367.93	92,876.04
Eureka P. L.	381,142.94	394,773.87
Buckeye P. L. (Macksburg)	307,707.87	305,555.59
Buckeye P. L. (Cleveland)	11,268.78	11,556.59
Buckeye P. L. (Lima, etc.)	128,103.04	126,909.34
Indiana P. L.	10,825.64	10,626.42
Cumberland P. L.	278,950.07	290,905.79
N. Y. Transit	20,228.51	23,358.42
Tidewater P. L.	166,918.60	172,611.33
Pure Oil Co.	168,350.74	170,962.88
Emery P. L.	53,942.07	53,805.20
Indian Ref.	103,137.03	100,635.27
Paragon Dev.	22,043.09	23,057.77
Pittsburgh P. L.	5,960.11	5,464.90
Total	1,916,270.20	1,939,117.25
Daily average	61,815.17	64,639.01

Note: Indian Refining Co. also reported other receipts of 246,044.19 bbls. Paragon Refining Co. had other receipts of 179,054.52 bbls. Paragon Development had other receipts of 1,390.43 bbls. Pure Oil had other receipts of 69,785.24 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipelines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for August and September:

	Aug., '26	Sept., '26
Nat. Transit	419,519.29	507,315.72
S. W. Pa. P. L.	407,494.63	400,138.59
Eureka P. L.	206,253.08	188,937.77
Buckeye P. L. (Macksburg)	139,988.47	165,992.88
Buckeye P. L. (Cleveland)	727.93	970.81
Buckeye P. L. (Lima, etc.)	787,040.76	808,123.61
Indiana P. L.	996,002.96	953,598.39
Cumberland P. L.	149,487.18	205,156.22
Southern P. L.	2,461.03	.....
N. Y. Transit	437,982.40	362,111.95
Northern P. L.	199,543.86	186,027.12
Tidewater P. L.	130,278.71	127,787.57
Pure Oil Co.	259,867.54	224,110.08
Emery P. L.	56,844.78	68,646.08
Paragon Ref.	134,578.87	179,064.52
Indian Ref.	357,390.83	357,563.25
Paragon Dev.	18,580.37	26,255.09
Pittsburgh P. L.	5,737.74	6,769.43
Total	4,709,789.43	4,767,559.08
Daily average	151,928.69	158,915.30

Gross Stocks

The gross stocks held by various pipelines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of August and September were as follows:

	Aug., '26	Sept., '26
Nat. Transit	1,095,592.26	1,071,850.94
S. W. Pa. P. L.	644,407.20	660,478.34
Eureka P. L.	1,426,004.84	1,326,018.38
Buckeye P. L. (Macksburg)	461,200.92	468,138.83
Buckeye P. L. (Cleveland)	93,451.86	107,440.22
Buckeye P. L. (Lima etc.)	2,585,933.06	2,527,039.47
Indiana P. L.	578,735.80	606,041.93
Cumberland P. L.	601,941.96	548,506.14
Southern P. L.	404,780.18	413,586.42
N. Y. Transit	748,135.27	698,391.18
Northern P. L.	385,641.31	395,811.54
Pure Oil Co.	429,768.51	443,866.35
Emery P. L.	34,677.04	20,449.37
Paragon Ref.	55,243.93	37,672.28
Indian Ref.	109,296.55	96,581.46
Paragon Dev.	9,505.05	8,576.21
Pittsburgh P. L.	4,541.24	3,282.93
Total	9,668,946.98	9,433,731.99
Decrease	65,739.55	235,214.99

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipelines at the close of August and September showing the gross stocks of the above fields:

	Aug., '26	Sept., '26
Pennsylvania	4,021,829.40	3,910,404.63
Lima	826,740.17	840,022.93
Kentucky	1,185,429.48	1,151,388.70
Mid-Continent	3,593,693.56	3,485,687.95
Illinois	41,254.37	46,227.78
Total	9,668,946.98	9,433,731.99

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1923	1924	1925	1926
January	75,790	62,638	56,831	55,630
February	71,092	68,023	60,606	60,394
March	76,592	68,721	60,575	61,644
April	75,614	71,058	63,062	63,019
May	77,366	63,942	59,217	60,580
June	77,593	63,220	61,270	64,121
July	71,879	64,208	62,639	63,206
August	76,910	59,942	59,686	61,815
September	72,358	62,930	62,610	64,639
October	76,256	64,976	60,996	.....
November	70,762	56,282	59,350	.....
December	69,271	55,814	57,974	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1923	1924	1925	1926
January	171,067	146,518	147,889	156,056
February	164,219	148,732	160,863	158,488
March	185,487	147,098	154,591	150,239
April	170,751	147,611	151,429	152,371
May	177,102	134,997	146,995	160,988
June	173,598	143,010	149,467	160,257
July	168,330	124,187	161,338	160,945
August	142,776	123,120	161,730	161,929
September	137,266	127,325	156,719	158,915
October	134,597	123,170	145,388	.....
November	131,426	124,400	143,582	.....
December	139,909	151,392	150,162	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields including oil received from other lines, at the close of each month for the past three years:

	1924	1925	1926
January	12,907,202	11,353,276	9,859,170
February	11,844,068	11,192,924	9,579,354
March	10,906,752	11,158,297	9,438,290
April	10,922,742	11,062,082	9,805,881
May	11,335,309	11,207,562	9,521,707
June	11,544,204	11,093,796	9,585,896
July	12,062,361	11,067,453	9,734,697
August	12,221,676	10,974,481	9,668,947
September	12,206,836	10,781,753	9,433,732
October	12,664,061	11,086,850	.....
November	12,268,530	11,068,158	.....
December	11,583,680	10,458,445	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

	Receipts.	Shipments.	Stocks.
1925—			
August	3,216.97	1,577.99	13,149,27
September	2,929.99	5,352.05	10,767,21
October	2,869.75	1,499.34	12,137,62
November	2,759.66	2,571.32	12,233,46
December	2,661.87	3,441.67	11,503,66
1926—			
January	2,990.16	1,478.36	13,015,31
February	2,580.23	2,776.19	12,819,45
March	2,754.62	1,732.77	13,841,30
April	3,137.40	4,519.68	12,459,02
May	2,933.29	2,096.35	13,296,96
June	3,217.62	1,655.15	14,858,43
July	3,025.86	4,076.11	13,808,11
August	2,886.59	2,121.21	14,574,49
September	2,788.18	3,373.06	13,988,61

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Cross stocks Oct. 1	2,426,711,46
Runs from wells	667,056,61
Other receipts	480,477,80
Regular deliveries	474,269,00
Other deliveries	573,321,49

The amount of Illinois oil run by the Tidewater Pipe Co. in September was 71,713.63 bbls. and deliveries were 41,613,37 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1925—		
September	706,434.87	510,697,21
October	706,532.00	533,683,31
November	664,556.30	488,648,31
December	665,086.99	578,928,67
1926—		
January	665,243.62	516,042,78
February	632,611.99	506,318,31
March	753,300.74	524,626,36
April	610,957.04	487,606,00
May	682,416.67	498,486,34
June	693,102.34	558,054,34
July	713,490.66	490,092,31
August	701,795.92	555,766,30
September	688,798.66	516,082,86

The Tidewater Pipe Co., Ltd., also delivered in September, 130,420.32 bbls. of Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

Average bbls. per day—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS New Orleans Galveston	Port Arthur Baton Rouge	Sabine Pass	Tampa	Total	Total All Ports
June	24,533	11,000	22,900	34,467	15,167	107,967	.....	.....	.....	.....	.....	107,967
July	15,677	2,903	24,678	12,065	12,616	67,839	.....	.....	.....	645	645	68,484
August	14,839	10,389	24,871	17,742	17,677	85,518	.....	.....	.....	.....	.....	85,518
September	10,500	7,200	54,433	22,066	11,300	105,500	.....	.....	.....	.....	.....	105,500

AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls. per day—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS New Orleans Galveston	Port Arthur Baton Rouge	Sabine Pass	Tampa	Total	Total All Ports
June	15,800	10,800	87,300	6,500	21,267	141,667	25,300	42,267	6,567	3,900	78,033	219,700
July	21,517	7,774	89,548	4,774	26,194	149,806	*13,226	†39,774	‡2,032	4,452	59,484	209,290
August	21,903	4,581	79,871	5,323	18,742	130,420	*19,516	†57,354	‡5,161	2,903	84,934	215,354
September	16,600	6,667	83,233	1,367	20,700	128,567	*9,500	†35,900	‡2,500	3,000	50,900	179,467

*Received at Galveston district. †Received at New Orleans and Baton Rouge. ‡Received at Port Arthur and Sabine Pass.

GROSS PRODUCTION OF THE UNITED STATES FOR 12 MONTHS

(IN BARRELS)

		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mountains	Eastern Fields	Total
October:	Month	26,615,676	14,921,199	11,196,511	3,477,146	6,409,281	1,871,836	3,194,950	3,248,000	64,584,599
	Daily average	645,648	481,329	361,178	112,166	206,751	60,382	103,500	104,774	2,081,747
November:	Month	19,895,967	14,590,980	10,550,067	3,321,780	5,927,955	1,758,882	3,088,121	2,992,000	61,525,752
	Daily average	686,580	486,366	351,902	107,897	197,598	58,629	102,937	99,733	2,049,730
December:	Month	19,249,711	14,123,848	10,930,455	3,308,816	6,047,883	1,762,966	3,187,164	3,086,900	61,696,743
	Daily average	620,959	455,608	352,595	106,736	195,093	56,902	102,812	99,552	1,990,353
January:	Month	19,069,562	13,674,813	11,049,715	3,250,536	5,489,604	1,726,290	3,136,280	3,014,000	60,410,801
	Daily average	615,147	441,123	356,442	104,856	177,084	55,690	104,396	97,226	1,948,742
February:	Month	17,163,963	12,392,016	9,943,233	2,877,812	4,756,836	1,584,184	2,773,905	2,931,000	54,427,949
	Daily average	612,999	442,572	355,115	102,779	169,887	56,578	99,068	104,678	1,943,748
March:	Month	18,835,786	14,312,886	11,014,238	3,334,887	5,115,837	1,889,662	3,161,250	3,249,000	61,063,547
	Daily average	608,283	461,706	355,298	107,577	165,027	60,957	101,976	104,823	1,967,860
April:	Month	18,091,771	14,468,190	10,799,760	3,330,120	5,127,510	1,959,570	3,231,404	3,192,000	60,191,325
	Daily average	603,059	482,273	359,992	111,004	170,917	65,319	104,229	106,400	2,006,377
May:	Month	18,667,144	14,507,008	11,940,797	3,516,640	5,482,939	2,231,938	3,459,488	3,217,000	63,122,900
	Daily average	602,166	467,968	385,187	113,440	176,879	71,998	111,596	107,000	2,036,230
June:	Month	18,269,417	14,073,510	11,783,550	3,366,453	5,064,760	2,305,480	3,437,905	3,165,000	61,666,075
	Daily average	608,981	469,117	392,785	112,215	168,822	76,816	114,597	112,167	2,055,269
July:	Month	18,743,199	14,657,482	13,983,759	3,613,267	5,019,892	2,174,813	3,336,664	3,424,000	64,953,076
	Daily average	604,619	472,822	451,089	116,557	161,932	70,123	107,634	110,452	2,095,261
August:	Month	18,766,080	14,615,236	17,073,436	3,712,436	4,878,191	2,190,739	3,457,687	3,424,000	68,116,805
	Daily average	605,325	471,459	550,756	119,756	157,361	73,895	111,538	110,452	2,197,297
September:	Month	18,104,954	14,436,510	17,560,800	3,480,060	4,603,230	2,079,840	3,141,123	3,330,000	66,736,517
	Daily average	603,498	481,217	585,360	116,002	153,441	69,328	104,704	111,000	2,224,550
	Total 12 months	224,061,571	170,773,678	147,926,340	40,489,930	63,923,918	23,436,295	38,810,682	28,663,900	748,086,314
	Daily average	613,867	467,873	405,278	110,931	175,151	64,209	106,331	105,929	2,049,553

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Stocks
3,189.21
10,767.21
12,137.61
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11,503.59

13,015.61
12,819.66
13,841.30
12,459.91
13,295.36
14,858.43
13,809.13
14,574.64
13,986.81

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26,711.69
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80,477.54
74,269.81
73,311.49
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533,682.31
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490,092.21
555,766.59
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Total
All Ports
107,867
68,404
85,511
105,500

Total
All Ports
219,796
209,396
215,334
179,467

Total

64,554,483
2,961,754

61,228,183
2,044,189

61,698,746
1,899,253

60,416,961
1,948,741

54,427,649
1,978,594

61,062,347
1,947,659

60,161,235
2,000,277

63,133,990
2,034,226

61,666,972
2,062,291

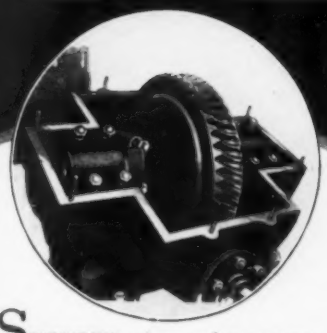
64,883,979
2,094,225

65,116,995
2,197,359

66,736,517
2,224,550

748,086,316
2,649,553

SERVICE

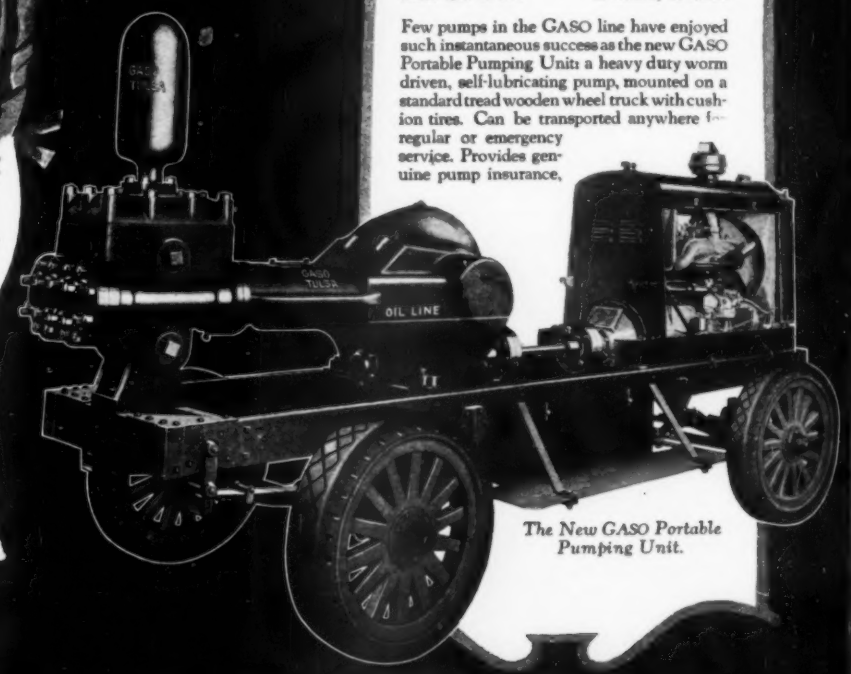


SERVICE, always important, becomes doubly important when urgently needed. It is then that our location, in the heart of the oil industry, performs its most important function. Pumps and parts sent from Tulsa are on the job and working by the time shipments from other points get under way.

Combine this advantage with GASO quality and you have a simple explanation of GASO leadership.

GASO PUMP & BURNER MFG. CO. .. *Tulsa, Okla.*

Few pumps in the GASO line have enjoyed such instantaneous success as the new GASO Portable Pumping Unit: a heavy duty worm driven, self-lubricating pump, mounted on a standard tread wooden wheel truck with cushion tires. Can be transported anywhere for regular or emergency service. Provides genuine pump insurance.



The New GASO Portable Pumping Unit.

GASO PUMPS

for every oil industry need

Sweating Natives mill their way over narrow paths carrying Axelson Products to final destination.

Down in the Torrid Zone

.....In dense, tropical jungles in far-off lands Axelson Pumps are serving—giving the same satisfaction that characterizes their performance in domestic fields.

Our Export Department is at your service.
Catalog upon request.

AXELSON MACHINE COMPANY
P. O. Box 337, Los Angeles, California
TULSA ST. LOUIS NEW YORK CITY
Mid-Continent Distributors—Frick-Reid Supply Co.
Eastern Distributors—Frick & Lindsay Co.

AXELSON
OIL WELL PUMPS

INTERCHANGEABLE PUMPS for INTERNATIONAL SERVICE

THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY

Axelitems

Every part of an Axelson Pump is interchangeable—ideal for international service.

Down on the Equator where Old Sol hits it up to 120° the Boys appreciate the long life of Axelson Pumps. No frequent pulling is necessary.

Preparing Axelson Pumps and Sucker Rods for oversea shipments receives a lot of extra attention in our factory.

No complaint has ever been received about the way we pack pumps for export shipment.

The famous Axelson Vanishing Thread in our Sucker Rods is preferred in remote fields too.

More Axelson Sucker Rods are in use than any other type. Such a record speaks for itself.

In 1892—34 years ago—the Axelson factory was established. Been making oil well pumps ever since.

This year our business is greatly surpassing that of 1925 . . . and 1925 sales were greatly in excess of 1924.

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